

SPEECH MONOGRAPHS

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THE NATIONAL ASSOCIATION OF TEACHERS OF SPEECH

Volume X

RESEARCH ANNUAL

1943

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SPEECH MONOGRAPHS

VOLUME X

RESEARCH ANNUAL

1943

GRADUATE THESES— AN INDEX OF GRADUATE WORK IN THE FIELD OF SPEECH—IX *

FRANKLIN H. KNOWER
State University of Iowa

SECTION I

THERE are 411 graduate degrees in speech reported in this series for the first time. Of this number all but nine were granted during the year of 1942. The Masters' degrees total 373, with 191 of these granted with requirement of thesis. There were 38 doctorates in speech or dramatic art granted during 1942. The graduate theses reports now include in total 2,051 Masters' theses and 279 Doctors' theses. In addition, 1,974 Masters' degrees have been granted without requirement of thesis.

Table I presents the data on institutional sources of these degrees. Separate columns indicate various degree levels. The number of degrees in each classification granted in 1942 are included in parentheses. The only institutions added to the list for 1942 are Oklahoma State College of Agriculture and Mechanics, and Pennsylvania State College. The

degrees granted at Pennsylvania State College over the past several years are included in this report. The number of degrees reported here represents only a slight decrease from the number reported in 1941.

A rough classification of the subject matter areas to which the studies were devoted is presented in Table II. Section II contains a list of theses titles classified by institution and type of degree granted, and arranged alphabetically by thesis author's name within the year. The titles are given numbers in sequence from the last published list, beginning with number 2102 and running to 2330.

Section III contains an index of the titles classified on the basis of the six major academic areas in the field. Doctorate theses numbers are indicated by an asterisk following the number. Titles are listed with cross references in more than one area where such overlapping is suggested by the title. The last lines of the index are devoted to the thesis index numbers listed in sequence by the institution granting the degree.

* The continued cooperation of departmental administrators in the institutions cooperating in providing data for these reports is gratefully acknowledged.

TABLE I
INSTITUTIONAL SOURCES OF DEGREES GRANTED
(1942 DEGREES IN PARENTHESES)

	MASTER'S DEGREES			Doctors' Degrees	Combined Total
	With Thesis	Without Thesis	Total		
Akron	2		2		2
Alabama	(4) 17	1	18		18
Baylor University	(1) 7		7		7
Brooklyn College	(1) 17		17		17
Carnegie Institute	11		11		11
Columbia University, Teachers College	(2) 5	(41) 749	754	(2) 29	783
Cornell University	(10) 130	(2) 3	133	(7) 35	168
Denver	(10) 57		57		57
George Washington	2		2		2
Grinnell	1		1		1
Hawaii	4		4		4
Illinois	(3) 14		14		14
Indiana	(3) 10		10		10
Iowa	(30) 475		475	(7) 63	538
Louisiana	(11) 81		81	(3) 15	96
Marquette	(1) 29		29		29
Michigan, University of	(27) 54	(13) 498	552	(1) 29	581
Michigan State	(1) 4		4		4
Mills College	2	1	3		3
Minnesota	(5) 49	6	55	(3) 5	60
Missouri	(5) 13		13		13
New Mexico Normal	8		8		8
Northwestern	249	(16) 210	459	(5) 18	477
Ohio State	(6) 44		44	(1) 4	48
Ohio University	(1) 8		8		8
Ohio Wesleyan	26		26		26
Oklahoma	(2) 12		12		12
Oklahoma A. and M.	(1) 1		1		1
Pennsylvania State	(7) 16		16		16
Purdue University	(3) 9	(2) 5	14		14
Redlands	3		3		3
South Dakota	(2) 6		6		6
Southern California	(1) 157	(34) 288	445	(1) 16	461
Stanford University	(8) 34		34	1	35
Syracuse	(2) 14	(1) 2	16	1	17
Utah	21		21		21
Washington, State College of	(1) 10		10		10
Washington, University of	(10) 73		73		73
Wayne University	(7) 38	(6) 15	53		53
Western Reserve	1	(7) 91	92		92
West Texas State College	(1) 2		2		2
Wisconsin	(16) 277	(10) 10	287	(6) 55	342
Yale	57	(20) 96	153	(2) 8	161
Grand Totals	(182) 2,050	(182) 1,975	4,025	(38) 279	4,394

TABLE II
THESES CLASSIFIED BY SUBJECT MATTER

		Previous Lists	New List	Total
Fundamentals	Master's—Number	226	36	262
	Percent	12.15	18.85	12.77
	Doctor's—Number	50	10	60
	Percent	20.75	26.30	21.51
Public Speaking	Master's—Number	276	26	302
	Percent	14.85	13.60	14.72
	Doctor's—Number	72	11	83
	Percent	29.85	29.00	29.75
Oral Reading	Master's—Number	68	11	79
	Percent	3.68	5.75	3.85
	Doctor's—Number	1		1
	Percent	.40		.36
Dramatics	Master's—Number	787	65	852
	Percent	42.25	34.05	41.52
	Doctor's—Number	49	12	61
	Percent	20.35	31.40	21.86
Speech Defects	Master's—Number	167	20	187
	Percent	9.00	10.45	9.11
	Doctor's—Number	30	1	31
	Percent	12.50	3.64	11.11
Education	Master's—Number	317	33	350
	Percent	17.05	17.30	17.06
	Doctor's—Number	35	4	39
	Percent	14.50	10.50	13.98
Miscellaneous	Master's—Number	19		19
	Percent	1.02		.93
	Doctor's—Number	4		4
	Percent	1.65		1.43

SECTION II
TITLES

UNIVERSITY OF ALABAMA

1942

M.A. Theses

2102. Anderson, Robert Henry, *Persuasive Elements in Selected War Speeches of Winston Spencer Churchill.*
2103. Cash, Edmond Joseph A., *Theatre Censorship in England and the United States.*
2104. Phillips, Helen K., *The Influence of Samuel Silas Curry on Modern Interpretation Textbooks.*
2105. Sherman, Josephine Elmerine, *An Objective Study of Nasalization of Diphthongs in Speech of Natives of Alabama.*

BAYLOR UNIVERSITY

1942

M.A. Thesis

2106. Morison, Josephine, *Oral Interpretation of the Poetry of Alfred Noyes.*

BROOKLYN COLLEGE

1942

M.A. Thesis

2107. Barshay, Bernard, Gordon Craig's *Theories of Acting.*

COLUMBIA UNIVERSITY
TEACHERS COLLEGE

1942

M.A. Theses

2108. De Girolamo, Guilian, *Speech Program for the Schools of Long Beach, New York.*
2109. Folse, Lucile, *State Courses of Study in Speech—an Evaluation.*

Ph.D. Thesis

2110. Larry, Cynthia, *A Study of the Sounds of the English Language as Spoken by Five Racial Groups in the Hawaiian Islands.*

Ed.D. Thesis

2111. Machlin, Evangeline Lewis, *Educational Dramatics in the Maritime Universities of Canada.*

CORNELL UNIVERSITY

1942

M.A. Theses

2112. Cox, Charles Wright, *A Theory of the Theatre.*
2113. DeBoer, Kathryn Betts, *The Rhymes of Philip Freneau as a Criterion of Eighteenth Century American Pronunciation.*

2114. Fischer, Joan, The Pronunciation of a Selected Group of Nursery School Children.
2115. Flohr, Julia Ann, The Rhymes of Joel Barlow as a Criterion of Eighteenth Century American Pronunciation.
2116. Fuller, Lucille, Luigi Pirandello in the English and American Theatre.
2117. Heagney, Genevieve, A Course of Study in Speech for a Public School System, Grades 1-12.
2118. Hodge, Beulah Wiley, A Study of John Galsworthy's Ideas on the Drama and Theatre, and His Use of Theatre Techniques.
2119. Lipscomb, Richard Henry, Tolstoy's Ideas on Art and the Drama.
2120. Niedeck, Arthur Ellsworth, A Sketch of the Theatres of Ithaca 1842-1942, Vols. I, II.
2121. Polson, Ruth Elizabeth, Discussion in the Junior High School.
2132. Lamb, Dorothy Kreuger, The Drama in Religious Education.
2133. Monson, Allwin Douglas, A Comparison of Debate and Discussion for Developing Skills in Social Integration.
2134. Montgomery, Sr. Mary Camilla, "Mary, His Mother," an Original Biblical Drama.
2135. Osborne, Clifford, An Appraisal of Three Methods of Studying Semantic Reactions in Speech Situations.
2136. Rhoades, Inez B., Personality Trends of Speakers and Writers in Junior High School.
2137. Westbay, Iris, A Study of the Relationships of Speech Personality to Social Effectiveness.
2138. Wetzel, Louis, A Study of Speakers' Ability to Estimate Audience Reactions Toward Themselves.

Ph.D. Theses

2122. Eaton, Julia, Classical and Popular Elements in English Comedy of the Eighteenth and Nineteenth Centuries.
2123. Hormann, Helmuth Winfred, From Weimar to Meininger, A Century of Theatrical Direction in Germany.
2124. Hunter, Charles Francis, Four Speeches of Thomas Hart Benton, Edited with Notes and an Introduction.
2125. Moody, Richard, Romanticism in American Drama and the Theatre from the Beginning to 1900.
2126. Mouat, Lawrence Henry, Methods for Describing a Public Discussion Applied to the United States Neutrality Debates, 1935-1941.
2127. Schreck, Everett Morrill, Drama as a Medium for Propaganda.
2128. Trapido, Joel, An Encyclopaedic Glossary of the Classical and Medieval Theatres and of the Commedia Dell'Arte.

UNIVERSITY OF DENVER

1942

M.A. Theses

2129. Brandt, Frances Dean, An Analysis of Student Reactions to Three Methods of Play Directing.
2130. Davis, Helen, A Study of the Time Factors in Radio Broadcasts.
2131. Hutchins, Carroll Elizabeth, A Study

UNIVERSITY OF ILLINOIS

1942

M.A. Theses

2139. Casebier, Georgia G., An Analysis of the Motives to which Woodrow Wilson Appealed in His Presidential Addresses.
2140. Hunter, Naomi, The Incidence of Stuttering in Twining Families.
2141. Stapp, Katherine, A Study of Speech Disorders in Danville (Illinois) Schools.

INDIANA UNIVERSITY

1942

M.A. Theses

2142. Herman, David T., An Harmonic Analysis Study of Hoarse and Non-Hoarse Voice Quality.
2143. Hill, Harris, Perseveration Tendencies of Stutterers and Normal Speakers.
2144. Lee, Robert Hardin, A Project in Stage Design for Eugene O'Neill's *Marco Millions*.

STATE UNIVERSITY OF IOWA

1942

M.A. Theses

2145. Barber, George Bradford, An Analysis of the Speech of Muscatine (Iowa) Secondary School Students.
2146. Bloodstein, Oliver N., A Study of Oral Reading Rates of Stutterers in Relation to Frequency of Stuttering.

2147. Branscom, Margaret Ellen, The Construction and Statistical Evaluation of a Speech Fluency Test for Children.
 2148. Brittin, Marie Eleanor, An Analysis and Criticism of Emerson's Philosophy of Public Speaking.
 2149. Eckhart, Margaret Virginia, A Study of Certain Auditory Factors in Relation to Defective and Superior Consonant Articulators.
 2150. Hanley, Theodore Dean, An Experimental Study of the Facial Expression of Student Actors: I.
 2151. Henderlider, Clair, Invention of Thomas E. Dewey in Selected Speeches in the Presidential Primary of 1940.
 2152. Herbert, Esther Lila, An Objective Study of Pitch in the Speech of Seven Year Old Girls: III.
 2153. Hootman, Margaret Elizabeth, An Analysis of the Problem of Selecting Dramatic Materials for the Ninth and Tenth Grades.
 2154. Hostettler, Gordon Floyd, The Invention of Jonathan P. Dolliver in His Speeches in the Iowa Senatorial Campaign of 1907.
 2155. Jones, Horace Rodman, An Experimental Study of the Facial Expression of Student Actors: II.
 2156. Keoppel, Fern Elizabeth Frith, An Experimental Study of Audience Comprehension.
 2157. Lassman, Frank Maurice, An Objective Study of Pitch in the Speech of Eight Year Old Boys: II.
 2158. Macedo, Joseph Luiz, An Actor's Preparation and Interpretation of Three Roles in the Theatre.
 2159. Miller, Lewis Walter, "Cotton Poison"—A Play in Three Acts.
 2160. Moeller, George Arthur, An Analysis and Evaluation of Selected Original Orations as Presented in the Iowa High School Forensic League of 1938-1939.
 2161. Moothart, Phillis Lorene, An Analysis and Evaluation of Oral Reading Testing Materials.
 2162. Munger, Opal Gertrude, A Director's Study and Prompt Book of W. S. Gilbert's *Pygmalion and Galatea*.
 2163. Nelson, Elaine Auburn, Invention in Selected Speeches of Dorothy Thompson.
 2164. Peirce, James Franklin, Audience Reactions to Primary Colors of Light on Actor's Faces in Dramatic Scenes.
 2165. Roberts, Ethol-May Elizabeth, A Job Analysis of Certain Factors Affecting the Teaching of Speech in Grades Seven, Eight, and Nine in the University High School.
 2166. Spence, Mary Frances, History and Execution of Costumes for Production of *Francesca da Rimini*.
 2167. Smith, Elizabeth M. A. Brown, The Adaptation of Educational Methods to Individual Differences with Special Emphasis on the Field of Speech.
 2168. Starkey, Eleanor Grace, Experimental Production of Three Original One-Act Plays.
 2169. Stewart, Helen Anabel, A Producing Director's Study of the Translations of the Oresteian Trilogy.
 2170. Stone, Franklin Dwight, Factors in the Training and Education of Norman Thomas Related to his Practice as a Public Speaker.
 2171. Thomson, Martha Ann, A Group of Original Radio Scripts Based on the Lives of Famous Women.
 2172. Walling, Elizabeth, Experimental Production of an Original Three-Act Play.
 2173. Wiley, John Herbert, An Objective Study of Pitch in the Speech of Seven Year Old Boys: I.
 2174. Wolfe, William Gerald, An X-Ray Study of Certain Structures and Movements Involved in Nasopharyngeal Closure.
- Ph.D. Theses*
2175. Arnold, Carroll Slyde, The Parliamentary Oratory of Benjamin Disraeli, 1842-1852.
 2176. Bach, Marcus Louis, Experimental Production of a Group of Original Stage Plays Utilizing Religious and Folk Material.
 2177. Braden, Waldo Warder, A Rhetorical Criticism of Invention of William E. Borah's Senate Speeches on the League of Nations, 1918-1920.
 2178. Chenoweth, Eugene Clay, An Investigation of the Training and Occupations of Bachelor of Arts Graduates in Speech and Dramatic Art, State University of Iowa, 1931-1940.
 2179. Curtis, James Frederick, An Experimental Study of the Wave Composition of Nasal Voice Quality.

2180. Pross, Edward Lawrence, A Critical Analysis of Certain Aspects of Ethical Proof.
2181. Yarbrough, Robert Clyde, The Homiletical Theory and Practice of Ebenezer Porter.

LOUISIANA STATE UNIVERSITY

1942

M.A. Theses

2182. Cahill, Helen Catherine, The Production of the Medieval Miracle Play.
2183. Cohen, Rebekah Marion, Conflicting Theories of the Theatre as Represented by Max Reinhardt and Constantin Stanislavsky.
2184. Elfenbein, Josef Aaron, An Investigation of Educational Radio in the Secondary Schools of Louisiana.
2185. Fife, Iline, Edwin Forrest: The Actor in Relation to His Times.
2186. Hamilton, Ruth Steagall, A Study of Deviations from Standard Southern Speech as Shown by Louisiana State University Freshmen Born in Louisiana.
2187. Hymel, Margret Cecilia, Fanny Kemble: Dramatic Reader.
2188. Kriger, Albert, A Study of the Speech in Clinton, Louisiana, at Three Age Levels.
2189. Maddox, Thomas Kier, The Treatment of Logic in Textbooks on Argumentation and Debate.
2190. Neely, George Albert, The School of Delsarte.
2191. Perritt, H. Hardy, An Analysis of Senatorial Debate on Neutrality Legislation in the 1939 Special Session of Congress.
2192. Perritt, Margaret Floyd, A Study of the Usage of the *r* Phoneme by Freshman Speech Students at Louisiana State University.

Ph.D. Theses

2193. Coates, Mary, The Teaching of Speech in the Junior High School—a Program Based on a Study of the Physiological and Psychological Characteristics of the Junior High School Pupil.
2194. Cox, Malcolm Sylvan, A History of the Spelling of English Phonemes.
2195. Hale, Lester Leonard, A Re-evaluation of the Vocal Philosophy of Dr. James Rush as Based on a Study of His Sources.

MARQUETTE UNIVERSITY

1942

M.A. Thesis

2196. Staudacher, Joseph, An Adaptation of Plautus' *Trinimus*.

UNIVERSITY OF MICHIGAN

1942

M.A. Theses

2197. Balgooyen, Theodore J., A Character Study of Shakespeare's *Richard III*.
2198. Batka, George F., E. L. Davenport, the Actor.
2199. Batka, Virginia M., Life of Augustin Daly.
2200. Bender, Jack E., A Study of Five High School Stages in Grand Rapids, Michigan, and Suggestions for Their Improvement.
2201. Church, Jessie E., The Production of a High School Play.
2202. Connell, Virginia E., The Interpretation of Lady Macbeth by Siddon, Cushman, and Ristori.
2203. Cook, Claire C., A Study of the Value of Radio Training to the High School Student.
2204. Davis, Annetta C., An Experiment in Conditioning Breathing of Stutterers.
2205. deCordova, June E., A Study of the Style of Selected Speeches of Robert Green Ingersoll.
2206. Jones, Alfred K., Speech Objectives and the Discussion Element in Debating.
2207. Katz, Arthur W., A Study and Analysis of the Speech of Clarence Seward Darrow.
2208. Lantz, J. Edward, Drama for a Purpose.
2209. Lantz, Ruth C., Choral Reading for Churches.
2210. Leibovitz, Theodore, An Analysis of the Deviations of Breathing Patterns of Normal Speakers in a Strange Situation.
2211. Maxwell, Glenn M., An Analytic Study of the Speech Style Contained in Four Public Addresses Delivered by Jefferson Davis in the Summer of 1858.
2212. McComb, Helen M., An Analysis of the Prose Style of Winston Churchill.
2213. Mowat, Vivian M., Correlation of Neurological Findings with Pedagogical Implications as Applied to the Tongue.

2214. Perkins, Carolin E., *Speech Education in Florida*.
 2215. Pitts, Willis N., *Theories and Practices in the Speeches of Booker T. Washington*.
 2216. Pottorff, La Rue E., *George Farquhar*.
 2217. Rowland, Westley A., *A Study of the Changes in Methods and Procedures in Argumentation*.
 2218. Shapiro, George, *Censorship of the Drama in the Elizabethan Period*.
 2219. Terretta, Ellie, *Shakespeare's Portia*.
 2220. Thomas, Archie M., *Edwin Booth's Acting in Hamlet, Othello, King Lear, Macbeth*.
 2221. Trubey, Lillian T., *An Experimental Study of Methods of Teaching Speech in the Ninth Grade*.
 2222. Watt, Ruth E., *Auditory Memory Span for Speech Sounds*.
 2223. Whitworth, Virginia F., *A Production Prompt Book for Shakespeare's Measure for Measure*.

Ph.D. Thesis

2224. Bailey, Mark, *Lawrence Barrett, 1838-1891*.

MICHIGAN STATE COLLEGE

1942

M.A. Thesis

2225. Cordier, Hubert, *The Oratory of Daniel W. Voorhees*.

UNIVERSITY OF MINNESOTA

1942

M.A. Theses

2226. Shackel, Mary Leith, *A Study of the Popularity and Technique of the Love and Courtship Themes in Plays Produced on Broadway Between 1919 and 1940*.
 2227. Smith, Ross Donald, *A Record and Analysis of the Presentation of Ibsen's Plays on the New York Stage from 1889 to 1942*.
 2228. Sponberg, Harold Eugene, *An Experimental Study of the Relative Effectiveness of Climax and Anti-Climax Order*.
 2229. Wenstrom, Dean, *The Costuming of Macbeth*.

M.S. Thesis

2230. Shinn, Marian Louise, *A Study of the Reaction of the Stutterer to Lip Reading and Normal Hearing Auditors*.

Ph.D. Theses

2231. Batcheller, Joseph Donald, *David Belasco*.
 2232. Carmichael, Herbert Kenn, *The Best Representative Short Plays in the United States: 1900-1940*.
 2233. Hurd, Melba Frances, *A Study of the Relationships Between Voice and Personality Among Students of Speech*.

UNIVERSITY OF MISSOURI

1942

M.A. Theses

2234. Cornwell, Clifton, Jr., *Public Speaking in Missouri, 1870*.
 2235. Griffin, Leland Milburn, *Public Speaking in Missouri, 1892*.
 2236. Leaver, Florence B., *Public Speaking in Missouri, 1875-1879*.
 2237. Malcolmson, Martha Louise, *A Production Thesis of Euripides' The Trojan Women*.
 2238. Mueller, Henry Lancaster, *A Phonetic Study of Suffixes in American English*.

NORTHWESTERN UNIVERSITY

1942

Ph.D. Theses

2239. Behl, William A., *The Rhetoric of Theodore Roosevelt*.
 2240. Johnson, Alma, *An Experimental Study in the Analysis and Measurement of Reflective Thinking*.
 2241. Larson, P. Merville, *A Rhetorical Study of Bishop Nicholas Frederick Severin Grundtvig*.
 2242. Masters, Robert Wm., *Clyde Fitch: A Playwright of His Time*.
 2243. Thorlakson, Edward J., *The Parliamentary Speaking of Jon Sigurdson*.

OHIO STATE UNIVERSITY

1942

M.A. Theses

2244. Finch, Wallace James, *A Study of the Services and Facilities for the Education of Children with Impaired Hearing in the Cleveland Public Schools*.
 2245. Hallauer, John William, *Exposition in Terms of Climax in O'Neill's Tragedies*.
 2246. Meyer, Ruth Florence, *The Role of the American Theatre in World War I*.
 2247. Obee, Olive Caroline, *Consonant Mispronunciations (Excepting Sibilants)*.

of Students Entering Ohio State University in 1941.

2248. Swineford, Merle Jeanne, The Use of the Puppet Theatre in College Speech Curriculum.

2249. Walcutt, Margaret, An Analysis of Italian Dialect as Evidenced in Italians Living in Columbus, Ohio.

Ph.D. Thesis

2250. Ewing, William Hollis, An Evaluation of the Individual Versus the Group Speaking Method of Teaching the Beginning College Speech Course—A Controlled Experiment.

OHIO UNIVERSITY

1942

M.A. Thesis

2251. Todd, George E., "For Men Will Dream."

UNIVERSITY OF OKLAHOMA

1942

M.A. Theses

2252. Stephens, Ruby Jo, Charles Dickens, Oral Reader.
2253. Summers, Dorothy, The Classical Bases of John Quincy Adams' Theory of Rhetorical Invention.

OKLAHOMA

AGRICULTURAL AND MECHANICAL COLLEGE

1942

M.A. Thesis

2254. Leverett, Ernestine, The Speech Habits of Cadet Officers Being a Clinical Investigation of the Frequency and Effect of Speech Disorders on Military Trainees, and an Investigation of the Relation Between Speech Habits and Ability in Giving Military Commands and Relation of the Grade in Fundamental Courses in Speech, English, and Mathematics, to Military Grades.

PENNSYLVANIA STATE COLLEGE

1937

M.A. Thesis

2255. Abrey, Mabel-Louise, A Diagnostic Profile of the Speech of Children in Grades 1, 2, and 3.

1938

M.A. Thesis

2256. Wiegner, Dorothy, Senator William Edgar Borah as a World War Orator.

1939

M.A. Thesis

2257. Lynch, Gene Kellogg, A Survey of Speech Education in the High Schools of Pennsylvania.

1940

M.A. Thesis

2258. Newbitt, Harriet Diven, A Compendium of the Objectives and Methods of the Contemporary Authorities in Teaching the First Course in Interpretative Reading on the College Level.

1941

M.A. Theses

2259. Couch, Eddie Gabe, A Study of the Relative Effectiveness of Closed Discussion and Closed Individual Reflection as Stimuli for Immediate Persuasive Speech Composition.
2260. Crumbling, Mary Hattie, A Clinical Case Study of Twelve Articulatory Defectives in a Public School System.
2261. Free, Nyla Irene, A Study of the Dialect of Featured Players on the American Professional Stage.
2262. Hall, Anna Mildred, A Study of the Dialect of Featured Players in the American Motion Picture.
2263. Weaver, Dennis A., A Survey of the Relative Importance in Life Situations of Various Types of Speech Ability.

1942

M.A. Theses

2264. Cushman, Helen Vernece, An Examination of the Treatment Accorded Speech by English Texts Used in Pennsylvania High Schools.
2265. Jones, Merritt B., The Cleft Palate Child, a Descriptive Analysis of Thirty-two Cases (A Group Thesis).
2266. Rank, Vernon Elwood, A Study of the Oratory of John Dickinson.

M.S. Theses

2267. Aaron, Thelma Mildred, The Cleft Palate Child, A Descriptive Analysis of Thirty-two Cases (A Group Thesis).
2268. Calvert, Wallace A., The Cleft Palate Child, A Descriptive Analysis of Thirty-two Cases (A Group Thesis).
2269. Lane, Ruth Rupp, The Cleft Palate Child, A Descriptive Analysis of Thirty-two Cases (A Group Thesis).
2270. Raabe, Margaret Caroline, The Cleft

Palate Child, A Descriptive Analysis of Thirty-two Cases. (A Group Thesis).

PURDUE UNIVERSITY

1942

M.S. Theses

- 2271. Des Jarlais, Robert W., A Measurement of Participants' Changes of Opinion During Group Discussion.
- 2272. Hansen, Burrell F., The Application of Sound Discrimination Tests to Functional Articulatory Defectives.
- 2273. Pittelman, Ruth K., A Comparative Study of Oral Reading Rate of Superior, Normal and Stuttering Speakers.

UNIVERSITY OF SOUTH DAKOTA

1942

M.A. Theses

- 2274. Bruhn, Florence M., Director's Manual and Prompt Book for Royall Tyler's *The Contrast*.
- 2275. Haarstick, Wilmine L., A Projected Course of Study in Speech for Grades Three to Eight, Inclusive, of the Winner, South Dakota, Public Schools.

UNIVERSITY OF SOUTHERN CALIFORNIA

1942

M.A. Thesis

- 2276. Rasmussen, Mabel Lucy, Aural Sensitivity Developed Through Choric Speech.

Ph.D. Thesis

- 2277. Griffin, Robert Stuart, A Historical and Psychological Study of the Conviction-Persuasion Concept in Public Speaking.

STANFORD UNIVERSITY

1942

M.A. Theses

- 2278. Bell, Alladine, "The Last American," an Original Full-Length Play.
- 2279. Carr, Marie B., A Consideration of the Realism in the Plays of James A. Hearne.
- 2280. Cloyd, Mabel Lee, The Technical Methods of Character Portrayal in the Plays of J. M. Barrie.
- 2281. Donaldson, Alice V., The Women Characters in O'Neill's Plays.
- 2282. Hamar, Clifford E., Complication in the Plots of Clyde Fitch.
- 2283. Hoskins, Althea D., An Historical

Study of the Concept of Stuttering as a Psychogenic Disorder.

- 2284. Mayer, Lyle V., Methods Used to Achieve Climax in the Plays of Eugene O'Neill.
- 2285. Philbrick, Norman, Act and Scene Division in the First Edition of Shakespeare: a Study of Nicholas Rowe's Treatment of the Problem.

SYRACUSE UNIVERSITY

1942

M.A. Theses

- 2286. Blitz, Nellie, A Half Century of Theatre in Early Rochester.
- 2287. Kearney, Mary, A Method by which the Degree of Effectiveness of a Problem-Solving Group Discussion may be Described and Measured in Terms of Agreement-Disagreement.

STATE COLLEGE OF WASHINGTON

1942

M.A. Thesis

- 2288. Peckenpaugh, Jeanne Carol, The Relationship of Oral Interpretation to Dramatic Art.

UNIVERSITY OF WASHINGTON

1942

- 2289. Clifford, Dorothy, American Women Playwrights before 1850.
- 2290. Dickinson, Mary Virginia, The Plays of Edmond Rostand on the American Professional Stage.
- 2291. Hardman, Dorothy Johnson, Oscar Wilde's Plays on the New York Professional Stage.
- 2292. Harrington, Ernest Robert, Jr., An Experimental Hearing Study on Two Hundred Thirty-two Primary Grade School Children With the Western Electric 4C Audiometer.
- 2293. Kells, Mary Elizabeth, Literary and Dramatic Criticism of Maeterlinck's Plays in America.
- 2294. McBride, Robert Joseph, The Productions of George Bernard Shaw's Plays on the American Professional Stage.
- 2295. McGrath, William Daniel, A Comparative Analysis of the Speech and Language Status of an Unselected Population of 353 Aments.
- 2296. Middleton, Walter, Ibsen and America, 1882-1906.
- 2297. Newland, Lillian Hazel Neete, The Development of the Yankee Character

in American Drama from 1787 to 1860.

2298. Spencer, Wayne Mondell, Barrie's Plays in the American Professional Theatre.

WAYNE UNIVERSITY

1942

M.A. Theses

2299. Daniel, Virginia, Speech, an Integrating Influence in the Schools, Including Content Materials and Methods for Junior High School Auditorium.
2300. Golden, Ruth I., The Grade School or Junior High School Promotion Program as a Unit in Speech Training.
2301. Hahn, Elise, A Proposed Course of Study for Training the Teacher to Improve Speech of Pupils in the Elementary Schools.
2302. McGraw, Walter, Speech Training Through Community Participation.
2303. Patterson, Dorothy, "Ladies in Retirement."
2304. Shaw, Gordon, History of Radio Station WJR, Detroit.
2305. Stevens, Marjorie, A Compilation of Current Radio Trends in Schools Throughout the United States.

WEST TEXAS STATE COLLEGE

1942

M.A. Thesis

2306. Gibson, H. L., What Courses Should Constitute the Elective Curriculum for Speech Majors in West Texas State Teachers College.

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SOCIAL CRITICISM IN THE BROADWAY THEATER DURING THE INTER-WAR PERIOD

A STUDY OF THE VALUE JUDGMENTS UPON SOCIAL INSTITUTIONS EXPRESSED
IN PLAYS PRODUCED BY NEW YORK COMMERCIAL MANAGERS BETWEEN THE
ARMISTICE OF 1918 AND THE OUTBREAK OF HOSTILITIES IN 1939.*

JACOB FLAVEL FOSTER
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For some years past the attention given to "social criticism" by contemporary playwrights has been a matter of note, not to say of debate. Our leading literary critics have devoted whole chapters—and sometimes whole books—to the subject. One authority was quite early moved to assert that:

The modern social drama—or the problem play, as it is popularly called—... has shown itself to be the fittest expression in dramaturgic terms of the present age; and is therefore being written, to the exclusion of almost every other type, by nearly all the contemporary dramatists of international importance.¹

While so sweeping a statement might seem at first glance to be an exaggeration, it has found considerable support among the thesis writers who have scrutinized one or more of the problems (such as war, government, the Negro, propaganda, etc.) treated by modern dramatists,² or the social contributions

of particular writers.³ These studies leave no doubt as to the prevalence of a critical attitude toward society on the part of many of our post-war playwrights, and indicate certain trends in their thinking in regard to specific social problems. But most of these works, having been written during the middle 'thirties, fail to cover the entire inter-war period—a factor of considerable importance, since, between the end of the First World War and the coming of the second, America completed a cycle, progressing from disillusionment to criticism, to revaluation, and finally to a reaffirmation of faith in the democratic ideal.

Furthermore, while the sampling of plays which these writers examined may have been representative, it was often, by their own admission, far from comprehensive. These limitations in scope as well as in time render it hazardous to generalize in regard to the American theater as a whole, even if one assumes that our theater is fairly represented as well as largely dominated by that geographically small but culturally powerful segment known as "Broadway."

Another point on which these studies would seem to have been deficient—if

* The contents of a dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy in the School of Education, New York University.

¹ Hamilton, Clayton, *Theory of the Theatre* (New York, 1910), p. 133.

² See, e.g., Studebaker, Rowena, "Attitudes Toward War as Revealed in Plays Presented on Broadway from 1914-1935," M.A. Thesis, University of Wisconsin, 1936; Jones, Jean Brady, "The New Deal Demanded by Modern Drama," Ph.D. Dissertation, University of Michigan, 1935; Pratt, Katherine, "A Social Study of the American Negro as Reflected in the Drama," M.A. Thesis, University of Wisconsin, 1932; Lawson, Hilda J., "The Negro in American Drama," Ph.D. Dissertation, University of Illinois, 1939; Ziskind, Sylvia, "A Study of Propaganda Drama in the Contemporary American Theater," M.A. Thesis, University of Southern California, 1937; Youngerman, H. C., "American Social Thesis Drama on Broadway Between 1918 and 1936," M.A. Thesis, University of Wisconsin, 1936.

³ See, e.g., Myslik, Barbara, "John Galsworthy's Contributions to Modern Sociological Drama," M.A. Thesis, University of Southern California, 1932; Wall, Vincent C., Jr., "Shaw the Statesman," Ph.D. Dissertation, University of Wisconsin, 1937; Blanchard, Fred C., "The Place of Maxwell Anderson in the Contemporary American Theater," Ph.D. Dissertation, New York University, 1939.

one accedes to the principle that a play does not truly become a play until it is produced—is that they concentrate largely on the published script. This permits little if any account to be taken not only of the fact that the meaning as well as the power of a script is subject to drastic modification by its interpreters (the actors, director, designer, and producer), but also that its social impact cannot truly be estimated without considering the manner and extent to which audiences react to it.

Again, while the writers of academic, scholarly theses have gone to considerable pains to define their terms, their definitions have too often been couched in vague and ambiguous language. This has been especially true when they have attempted to catalogue plays according to their treatment of *social problems*, which sociologists themselves have found difficult to define and delimit. Many of these same sociologists have pointed out that these problems arise out of the malfunctioning of *social institutions*, which, being more tangible, are fairly easy to classify.⁴ Yet, apparently no one had attempted to classify plays in this manner.

I. SOURCES OF MATERIAL

Since it was manifestly impossible for the writer to see all the plays produced in New York during the past quarter-

century, or even to read their scripts, since many have not been preserved either in print or in manuscript form, much of this material was drawn from the published criticisms of reputable reviewers. Of these a comprehensive collection is readily available, not only in the back numbers of periodicals, but in the files of the Theater Collection of the New York Public Library. Thus, by reading a sufficient number of able criticisms,⁵ it was possible to obtain a fairly complete and accurate knowledge of many obscure plays which had long since passed into oblivion. Beyond that, in this manner *every* play was submitted to a competent jury, not only for evaluation as to its dramatic worth and the adroitness of its staging, but also for an estimate of its author's principal theme, and of the social import of that theme as he presented it.

This is not to indicate that the investigator supinely accepted the judgments of the critics. There were occasions when his estimate differed radically from theirs, and in such cases he had no hesitancy in expressing his "minority opinion." But in the vast majority of cases he found that by reading a sufficiently large and diverse number of criticisms he gained a greater insight into the real meaning of a play, even one he had both seen and read, than could possibly have been achieved through his single judgment. Furthermore, being trained spectators, the "critical confraternity" may be viewed as representing *audience re-*

⁴ The family, the church, the school, the state, and business are generally cited as "major" or "basic" institutions. These, respectively, house such problems as parental-filial relationships, sex morals, and marriage; bigotry, commercialism, and creed conflict; regimentation, academic freedom, and the remuneration of teachers; crime, politics, and war; capital, labor, over-mechanization, plutocracy, and poverty. Some sociologists add journalism and welfare and recreational agencies as "emergent" or "sanctional" institutions, thus providing pigeonholes for the problems of censorship and sensationalism; health; the commercialization and passivization of recreation; etc. (See Ballard, Lloyd V., *Social Institutions*, New York, 1939.) One authority, in listing the community as an institution, offers

haven to such problems as race, class, immigration, and urbanization. (See Odum, Howard W., *American Social Problems*, New York, 1939.)

⁵ No fewer than six and usually ten or more reviews of each play were read. Richard Lockridge, Richard Watts, Jr., Arthur Pollock, and Burns Mantle were found to have been especially on the alert for social criticism, while Brooks Atkinson, John Anderson, and John Mason Brown, among others, could be relied upon for sound though more guarded judgments, which seemed progressively to increase in social consciousness as time went by.

action in its most articulate form; and their opinion as to what subject matter they consider worth while should—if a sufficiently wide number are consulted to allow for individual prejudice—be representative of the attitude of at least the more discerning theater-going public.

The clearest way for an audience to express itself, however—even to the extent of reversing the critics' judgments—is through the box office. Therefore, with due exceptions made in the case of "forced runs," the number of performances played was accepted by the investigator as a gauge of a play's popularity, and therefore, to a degree, of the popularity of its theme.

II. THE PROCEDURE

Each drama which had been cited by two or more critics—as well as the investigator—as containing social criticism was indexed and its theme singled out. The length of the play's run (as a gauge of its popularity) was also noted, together with an estimate of the extent to which production factors (such as the ability of the actors and director) influenced its success.

Seasonal classifications of all plays thus catalogued were made and compared with a chronological summary of the principal events of the year. Charts and tables were then made to show: (a) the number of plays each season which seemed to contain social criticism, as compared with the total number of plays produced; (b) the frequency of appearance, as a dramatic subject, of each major social institution; (c) the yearly percentage of plays containing social criticism, of "hits" containing social criticism, etc.

All plays in which the functioning of an institution was questioned were included in the general analysis, whether this seemed to have been the author's primary purpose (as in the Theater

Union's pro-labor productions, for instance) or had apparently been subordinated to entertainment values or character analysis (as in the case of such works as *Of Thee I Sing*, *Abie's Irish Rose*,⁶ and *Tobacco Road*). Nor was it deemed necessary that a definite remedy be suggested, the "sociological" portraits of Galsworthy, Steinbeck, and Caldwell, and the "social satires" of Kaufman, Hart, and Boothe, having been included along with the "thesis" plays of Rice and the "propaganda" pieces of the "left-wing" playwrights.⁷

III. RESULTS OF THE STUDY

Though social criticism in the theater is by no means new, the extraordinary degree of literary finesse and sociological penetration to which it has been carried by contemporary dramatists, and also the catholic diversification of the problems treated, are modern phenomena. Analyses of 947 plays classified in this study⁸ (out of more than 4,000 examined) show that the American theater—viewing that institution as a whole composed of interpreters and spectators as well as playwrights—has exhibited, in general, a deep concern over the functioning of our social institutions. It is evident that, after a slow, timorous, and awkward start following World War I, this concern deepened and broadened, even in the face of a general

⁶ A sufficient number of critics seemed to see therapeutic value in this controversial work to warrant its inclusion, especially in view of Miss Nichols's avowal of a missionary purpose. (See "The Million Dollar Hit," *Theatre Magazine*, July, 1924, p. 19.)

⁷ Comparative analyses were made both of plays of "primary" and "secondary" social criticism, and of the four methods of social criticism (outright "propaganda," the defense of "thesis," "sociological analysis," or "social satire"). But these cannot be dwelt upon here for lack of space.

⁸ Not including the productions of the Federal Theatre Project, which, though analyzed and reported in a special section of the dissertation, are omitted here to avoid skewing the statistics on the commercial theatre.

decline in theatrical activities which set in during the nineteen-thirties. Before the attention of playwrights and public was absorbed by World War II, social problems were figuring prominently in 60% of the Broadway successes, and commanding the interest of from one-tenth to three-eighths of the active playwrights. Indeed, most if not all the dramatists of real stature injected social criticism into their works, while many of the leaders often made it their prin-

pressure has begun to lift somewhat. In other words, dramatic seers are either moved to cry warnings of approaching disaster, or to analyze social problems when the participants have sufficiently recovered—and matured—to think constructively about their ordeal.

The following table, although based on data too subjective to permit complete reliability, gives a sufficiently valid picture, it is hoped, to illustrate these trends:

TABLE I
Comparison, by Percentages, of the Yearly Volume and Relative Success of Plays of Social Criticism with the Season's Total Record

Season	Per Cent of Plays Containing Social Criticism	Per Cent of S.C. Plays Which Were Hits	Per Cent of Hits Containing Social Criticism	Per Cent of Season's Plays Which Were Hits
Back-to-Normalcy				
1918-19	3.5	60.0	.6	36.7
1919-20*	7.3	18.1	2.2	30.7
1920-21	7.7	58.4	11.5	38.8
1921-22†	17.4	31.4	18.0	25.5
1922-23	11.6	50.0	20.4	25.8
1923-24	11.7	60.9	26.4	28.6
Coolidge Boom				
1924-25	7.8	50.0	15.5	25.2
1925-26	9.9	42.8	19.6	21.2
1926-27	12.4	37.5	19.0	24.4
1927-28	13.7	27.0	13.8	24.0
1928-29	17.4	23.1	18.4	21.9
Depression				
1929-30	14.2	29.4	20.4	20.4
1930-31	14.9	26.9	18.4	21.8
1931-32	21.0	19.5	29.6	13.8
1932-33††	17.2	21.2	24.0	13.0
1933-34	19.1	29.0	34.6	16.0
1934-35	21.3	29.4	30.3	20.6
Drift Toward War				
1935-36	24.6	46.9	44.0	26.0
1936-37**	23.6	28.0	29.2	22.6
1937-38	31.7	36.4	50.0	23.0
1938-39	37.4	44.1	60.0	27.5
1939-40	27.8	20.0	21.7	25.5

* Actor's strike.

† Depression and theater building boom.

†† National financial crisis.

** Epidemic of sitdown strikes.

cial consideration.

It seems indicated also that authors are most stimulated to write, impresarios to produce, and theatrogoers to patronize socially critical plays, not during periods of acute social crisis, but beforehand, while a crisis is impending, or after its

An even more important trend, which numerical data cannot show, was the way in which both playwrights and box-office reflected the temper of the period. Thus, the wave of disillusionment and challenge to the old mores which followed the Armistice was manifest in the

first works of such young iconoclasts as O'Neill, Rice, and Capek, as well as in the "flaming youth" studies of the early Rachel Crothers school. As readjustment was completed and the speculative orgy set in, criticism became more stringent and the targets more specific, until, with the coming of the "Great Depression," our entire capitalistic system was challenged and re-evaluated, not only by the avowed radicals, but by such measured thinkers as Maxwell Anderson and S. N. Behrman. (One might cite *Both Your Houses* and *End of Summer* as examples.) The approach of war, however, brought with it a renewal of faith in the democratic ideal that rallied most of our leading dramatists to its support.

Still another trend which this study brought to light was the shift in the attitudes of the critics, many of whom were formerly dubious—and some actually suspicious—of social criticism, but who came to demand at least a penetrating viewpoint on the existing order as a requisite to good drama, and even began at length to apologize for condemning poor plays with worthy social themes.

Problems treated

Interest in social problems seemed gradually to broaden during the inter-war period, in scope as well as in numbers. The more intimate problems of the *Family* were most popular during the "Back-to-Normalcy" period (1918-19 to 1923-24), to be surpassed during the "Coolidge Boom" (1924-25 to 1928-29) by the less personal problems of *Business*. In the "Great Depression" (1929-30 to 1934-35), the group problems of the *State* took the lead, maintaining it unquestionably throughout the "War-Drift period" (1935-36 to 1939-40). The treatment accorded the other major institutions—the *School*, the *Church*, and the *Community*—was too sporadic to

count for much statistically, even though some of it was quite penetrating.

1. *Problems of the State*. The first socio-political problem to make its appearance in the theater, if we include a few lingering "patriotic" and anti-German plays of the *Friendly Enemies* school, was that of *war*. This type of work was supplanted in the early 'twenties, however, by imported pacifist tracts such as Galsworthy's *The Mob*, and domestic "debunking" dramas like Emery's *The Hero*. During the "Coolidge Boom" attacks on economic imperialists—especially munitions makers—began to appear, and continued until 1937-38, some of them (notably Tretyakov's *Roar China* and Sklar and Maltz's *Peace On Earth*) strongly biased toward the left. Concurrently there were both partial and dispassionate demonstrations of the horror and the futile waste of war, all of which echoed the pacifist sentiment of the times. Of these, Anderson and Stallings's *What Price Glory* and Sheriff's *Journey's End* were the most popular. As early as 1934-35 hints began to appear (in Behrman's *Rain From Heaven* and Anderson's *Valley Forge*) that war in defense of a worthy cause is sometimes necessary; but these did not come to full fruition until Sherwood gave us *There Shall Be No Night* in 1939-40, when the Fascist aggressors were practically upon us. In all, there were sixty-six war plays, sixteen of them hits, with the proportion of successes greatest during the "Coolidge Boom."

The twin issues of *government* and *politics* achieved greater popularity than any other social problems the theater treated during the inter-war period, grossing eighty-four plays, twenty-four of which were successful. (This success-to-failure average—approximately one-in-four—was about the same as that of plays in general.)

First in evidence were some feeble

fulminations against Bolshevism, such as *The Red Dawn* and *Poldekin*, in which two well-known writers, Thomas Dixon and Booth Tarkington, echoed the "Red Scare" of the early 'twenties. These were replaced during the "Coolidge Boom" by attacks—satirical and serious—on bureaucracy and corrupt politics. Some of these, especially those of the 'thirties, reached a startling degree of audacity and no little penetration. (Witness Hart and Berlin's *Face the Music* and Anderson's *Both Your Houses*.) With the approach of the "Great Depression," communism began to get a fairer, sometimes—as in Lawson's later works—even a partial hearing. By 1934-35, however, democracy had again begun to win champions (anti-fascist attacks had commenced the year before), and by 1938-39 leading dramatists had become missionary in their zeal for the American Way, and the public was eagerly supporting their manifestations, as shown by the phenomenal success of Kaufman and Hart's play of that name, as well as of Sherwood's *Abe Lincoln in Illinois* and Anderson's *Knickerbocker Holiday*.

On the dual problem of *crime* and *penal procedure* the theater was quite vocal, but the public seemed less interested, for, of twenty-seven plays on this topic, only five scored hits.

Serious attempts began in the early 'twenties (and continued intermittently throughout the period) to expose the weaknesses of certain penal practices such as circumstantial evidence, the "third degree," capital punishment, and others. But the most popular philosophy of the post-war years was determinism—hereditary, environmental, economic—and four of the period's hits, (*Escape*, *An American Tragedy*, *The Criminal Code*, and *The Last Mile*), two of which were drastic indictments of the prison, pointed out the small responsibility the

criminal shares in his own fate. The same was true of many of the lesser works dealing with the reformatory, kidnapping, and the like. The practice of lynching received some of the most forthright attacks, though hardly the most able. (Witness Millen's *Never No More*.) Furthermore, such a message seemed hardly apropos in New York, and the public failed to respond.

Both the playwrights and the public were quite catholic in their scrutinies of the various weaknesses of the law and the courts. Some twenty-five plays (twelve successes) attacked problems in this field, such as class justice (as in Anderson and Hickerson's *Gods of the Lightning*, Golden's *Precedent*, etc.); the inhuman inflexibility of the law (as in Galsworthy's *Escape*); legal chicanery and the ethics of the profession (as in Rice's *Counsellor at Law*); the American public's sentimental attitude toward criminals (as in Watkins's *Chicago*); and the weaknesses of various specific laws, including the codes on divorce (as in Pezet's *Hotel Alimony*), rape (as in Geary and Greely's *Penal Law 2010*), and breach of promise (as in Lindsay and Robinson's *Oh, Promise Me*).

Prohibition seemed to merit treatment as a separate problem, but was never popular, having been considered seriously only six times (never after 1930-31), and successfully only once (by Sturges in *Strictly Dishonorable*), and then in its most comic manifestation.

2. *Problems of Business.* Business ranked first as a dramatic topic for social criticism during the time when business was bidding fair to become the American god; and second during all the rest of the inter-war era, figuring in a total of 127 plays, 43 of which were successful.

Expressions on the problem of *labor* changed, with the coming of the "Coolidge Boom," from anti-radical attacks

(such as *The Challenge*, Eugene Walter's fable of a "converted" labor agitator), which were never popular, to sympathetically realistic portrayals (like O'Neill's *The S.S. Glencairn*,) some of which were well liked. Pro-labor (even pro-communist) propaganda broke out during the late 'twenties, in the offerings of the New Playwrights' Theater, but made no impression with the public until the middle 'thirties, when the "Great Depression" had begun to lift, giving voice to all the "isms" offering social panaceas—and, incidentally, opening the theater to such talented young radicals as George Sklar and Clifford Odets. A few mildly reactionary replies to this barrage appeared, but were not popular. Sympathetically realistic plays like Gow and Greenwood's *Love on the Dole* however, seemed to hold their place in public esteem, and eventually to replace the more extreme works.

Plutocracy, in all its ramifications—money-worship, idealism and art *versus* materialism, title-hunting, Babbittry, stock gambling, and the like—offered the most popular target to the many playwrights who were alarmed at the rise of materialism in American culture, an alarm which deepened and became more specific as the speculative orgy of the boom turned into the depression. And—except during the darkest days of the depression—a generally sympathetic public was at hand to listen to these warnings, as is evidenced by the popularity of Connelly's *The Wisdom Tooth*, McEvoy's *The Potters*, Kaufman and Connolly's *The Beggar on Horseback*, Lawson's *Success Story*, Kaufman and Hart's *Merrily We Roll Along*, Hellman's *The Little Foxes*, etc.

The problem of *poverty* and its effects on marriage, crime, etc.,—as well as its tonic influence on well-to-do young idlers—was also quite cordially received, after 1924, and during the early depres-

sion seasons. (Witness the success of Anderson's *Saturday's Children*, Kingsley's *Dead End*, Tonkonogy's *Three Cornered Moon*, etc.)

The *machine* loomed briefly as a menace in the early 'twenties, in such jeremiads as Rice's *The Adding Machine*, and Capek's *R.U.R.*, and again (vaguely) in the middle 'thirties, in Anderson's *High Tor*. But machine-minded America never took this problem very seriously.

3. *Problems of the Family*. Certain factors engendered by the war, among which was the re-assimilation of men into civilian life, raised the question, during the early 'twenties, of woman's place in the new order. But the theater had already contributed too much toward the settlement of this problem to allow for more than fitful and usually banal treatment of it in the inter-war period. Consequently, although Forbes's *The Famous Mrs. Fair* was hailed in its time, such plays as Unger's *Ladies of Creation*, Shipman's *She Means Business*, and Howard's *Half Gods* received short shrift.

The wave of disillusionment, resentment against coercion, and reversion to material and sensual values which had set in by 1920-21 stimulated dramatists to a thoughtful inquiry into the cause and effects of the revolt of "flaming youth," resulting in such varied commentaries as Manners's *The National Anthem*, Dodd's *The Changelings*, and Crothers's *Nice People*. This at first gave occasion for considerable tawdry sensationalism as well as courageous exploration. (Witness the popularity of the bedroom farce.) But during the "Coolidge Boom" the influences of economics and psychopathology on family problems were being recognized, and these, along with the general acceptance of a more rational moral code, brought forth many penetrating studies of *par-*

ental-filial relationships, marriage and divorce, and sex morals. (Howard's *The Silver Cord*, Barry's *Paris Bound, Tomorrow and Tomorrow*, and *The Animal Kingdom*, and Crothers's *When Ladies Meet* might be cited as outstanding examples.)

The approach of war wrote *finis* to dramatic analysis of the family, no plays of any consequence having seriously treated such problems after 1936-37, and none at all after 1938-39. (The seasonal total, indeed, had shown a general decline since 1921-22.) But there had already been ninety-three plays in this field, of which thirty-eight had won financial success.

4. *Problems of the Community*. That cluster of biological and ecological problems which become so prominent whenever men try to live in groups—termed here Community problems—showed an erratic behavior, numerically, during the inter-war period, with many violent fluctuations, some of which ran counter to the trends displayed by other institutions. In spite of this, the community figured in enough plays (84) to rank fourth in the list, while its proportion of successes (one play in three) was somewhat above the average.

The problem of *race* received by far the most extensive treatment of all the community problems, as well as some of the most successful. While race riots and Ku Klux Klan depredations were on the ascendant during the 'twenties, and again when Nazi anti-semitism was finding local proponents during the 'thirties, the American theater was doing yeoman service in behalf of oppressed minorities. Twenty-four plays spoke out on Negro problems. These ranged all the way from cloudy pictures of voodooism like Hamilton and Foster's *Savage Rhythm* to accurate and sympathetic portraits of Negro life such as the Heywards' *Porgy*; and from such

penetrating but dispassionate studies of miscegenation as O'Neill's *All God's Chillun Got Wings* to indignation over instances of blatant injustice as seen in Wexley's *They Shall Not Die*. Thirteen others (ranging from Galsworthy's *Loyalties* to Nichols's *Abie's Irish Rose*) dealt less violently with the Jew, one (Osborne's *Uptown West*) with the Japanese, one (Treadwell's *Gringo*) with the Mexican half-breed, and one (Anderson's *The Wingless Victory*) with the South Sea Islander—all in juxtaposition to the race-conscious white.

Of the twenty-one plays (nine successful) touching upon *caste* distinctions, many were either trivial jibes at ancestor worship (such as Tarkington's *Tweedles*), remote though penetrating considerations of foreign nobility (like Molnars *The Swan*), or muddled attempts to say something illuminating about the plutocrat and the proletarian in our own country. However, our native aristocrats—both the landed gentry of the crumbling Old South (as in Green's *The House of Connolly*) and the often over-bred scions of the industrial North (as in Bromfield's *Times Have Changed*)—were penetratingly scrutinized and the problems contingent upon their disintegration pointed out. At length, their morals were extolled (in Barry's *The Philadelphia Story*) as being every bit as sound as those of the proletariat.

Not very important were the few attempts to consider *immigration*, most of them having been too trivial (like Tarkington's *Poldekin*) or too inchoate (as in Basshe's *The Centuries*) to make any real impression. Much more fruitful treatment was accorded *isolation*, for among the ten plays on this topic (three of which made signal records) were some penetrating studies of the hardness and meanness bred of too much solitude and too exhausting struggle with the

elements (as shown in O'Neill's *Desire Under the Elms*); of the homely courage but woeful ignorance of the Southern mountain folk (Vollmer's *Sun-Up*, e.g.); and of the appalling results of stagnation among the peoples of our ethnological backwaters (note Caldwell's *Tobacco Road*). The ills attendant upon gregarious living (*urbanization*) were also brought to the attention of the public, twice vaguely, but once (by Rice in *Street Scene*) with arresting power and clarity and tremendous success—and this at a time when the public's speculative fever was at its height, and its "social consciousness," one would think, at a low ebb.

5. *Problems of the Church*. In the twenty-eight plays (thirteen successes) dealing with problems of the church during the inter-war period we see reflected the same alarm at the rise of materialism, plus the same challenge to traditional authority, that was evident in the family and business plays. We see this challenge crystallize into attack on definite weak spots within the institution, such as *commercialism* (e.g., in Kennedy's *The Servant in the House*), *hyperemotional evangelism* (in Hurlbut's *The Bride of the Lamb* and others), and *creed conflict* (in Ervine's *Mixed Marriage*)—though never attacking the institution itself. And finally, we see in such plays as O'Neill's *Days Without End* and Barry's *The Joyous Season* an effort to return to the "old fundamentals"—an effort which fell short of effective presentation on the stage partly because the playwrights themselves were not too sure as to just what those fundamentals were, and partly, perhaps, because the church itself had not sufficiently "cleaned house" of its obsolete ideas and mores to command wholehearted public acceptance. In 1937-38 some indications of a revival of interest in religion might be seen in

the popular approval of Goodman's appeal for a re-vitalized church in *Many Mansions*, of Carroll's anti-clerical but pro-religious sentiment in *Shadow and Substance*, and of Crothers's portrait of the spiritual re-awakening of a faddist, *Susan and God*. But most of the religious plays—including these—dealt more with people than with churches.

6. *Problems of the School*. Dramatic treatment of problems besetting the school was rather at random. The first problem—and the last—to command attention was that of *academic freedom*. (The two plays on this topic—Glaspell's *The Inheritors* and Thurber's *The Male Animal*—were probably inspired by the "Red scare" of the early 'twenties and its echo in the late thirties.) The remaining thirteen plays (three successes) in this field attacked school politics and insufficient pay for teachers (in Day's *Makers of Light*), too close segregation for adolescents (in Van Druten's *Young Woodley*), over-emphasis on athletics (in *The Male Animal* and others), and military regimentation (in Misrock's *Bright Honor* and Viertel's *So Proudly We Hail*). The general efficiency of both the high school and the college was questioned, sometimes with understanding (as in Goldsmith's *What a Life*), sometimes with fatuity.

7. *Minor Institutions*. In its treatment of the minor institutions during the inter-war period, the theater was even more sporadic, thirty-nine plays (fifteen hits) having been divided among the problems of *recreation*, *journalism*, and *welfare*.

In the field of *recreation* its contributions were confined mainly to laying bare with cynical glee the hollowness of some institutional "stuffed shirt" such as the motion-picture industry (as in Kaufman and Hart's *Once in a Lifetime*) or the popular song factory (as in Kaufman and Lardner's *June Moon*).

Only twice—late in the period, as was to be expected—were understanding attempts made to treat a real recreational problem (in this case, the febrile attempts of the city-dweller to find relaxation, as seen in Kober's *Having Wonderful Time* and Wolfson's *Excursion*) and only once were the contributions, rather than the foibles, of a recreational institution seriously analyzed. (This was in Behrman's *No Time for Comedy*. The institution, naturally enough, was the theater.)

In regard to *Journalism* there were also some attempts at therapeutic satire, on the "publicity racket" (in Barker's *The Man on Stilts* and Hyman's *Happy Landing*), the radio (in Manley's *Wild Waves*, etc.), the gossip columnist (in Seff and Wilson's *Blessed Event*), and the news-manufacturing foreign correspondent (in the Spewaks' *Clear the Wires*). These were concentrated in the early 'thirties, and were generally unsuccessful.

During the 'twenties, however, one of our social phenomena—the "yellow press"—reached really vicious proportions; and upon it the theater centered some scathing attacks, as seen in Watkins's *Chicago* and Hecht and MacArthur's *The Front Page*. These virtually ceased when the Depression (aided, possibly, by a slight diminution in the public's appetite for sensationalism) removed the chief offender—the *New York Evening Graphic*—just a year and a half after its former manager, Louis Weitzenkorn, had brought to the stage in *Five Star Final* a merciless castigation of that very sheet.

Thus it is evident that, in the theater, the institution of journalism went through the stages of exposure and attack, but never reached those of constructive analysis or re-affirmation, as had been the case with the other institutions.

In the *welfare* plays the reverse was true. There were a few early works decrying narrow-mindedness in the medical profession (such as Brandon's *The Outsider* and Shaw's *The Doctor's Dilemma*). Some later plays considered specific health problems such as heredity (as in Bridie's *A Sleeping Clergyman*), homosexuality (as in Bourdet's *The Captive* and Shairp's *The Green Bay Tree*), and the like; and some detached studies followed, portraying welfare establishments (such as Sierra's ecclesiastical havens in *The Kingdom of God* and Albright's state insane asylum in *All the Living*). But the theater saw, in 1933-34, two realistic and analytical but positively eulogistic tributes to the medical profession (viz. Howard's *Yellow Jack* and Kingsley's *Men in White*). These plays, in fact, offered some of the earliest examples of the theater's "re-affirmation" trend. An "attack" (by Saul and Hayes, called *Medicine Show*)—not on medicine but on the profession's stubborn resistance to socialization—which followed much later (1939-40) was not well received by the public.

IV. SUMMARY AND CONCLUSIONS

It is clear, then, that the American theater of the inter-war period vividly "held the mirror" up to a society in transition, reflecting, in regard to the major social institutions, the four phases of disillusionment, criticism, revaluation, and reaffirmation; that the public expressed its approval of this concern over the jamming of our social machinery, both through its box-office and—increasingly—through the pens of its spokesmen, the critics; and that the problems which demanded attention were progressively less those of the individual and more those of the group. When America finally entered the war and public taste seemed to turn again toward "escapism," the cycle seemed for a time to

have been completed. Such was not the case. A dramatist can still attack social problems and yet make money—if he does so honestly and capably. (Witness the success of Hellman's *The Watch on the Rhine*, Williams's *The Corn Is Green*, and Wright's *Native Son*.) And, while democracy is still the main theme, weaknesses within our own democratic system can get a sympathetic hearing.

Even our war-time "escapist" drama is refreshingly free from jingoistic propaganda. Probably "spiral" or "helix" are better terms than "cycle," for, with all its recessions—financial and ideological—the American theater has shown real and continuous progress, toward a wiser, deeper, more dynamic drama for a soberer, saner, more dedicated people.

THE HAYMARKET THEATER UNDER COLMAN THE YOUNGER, 1789 TO 1805

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EARLY in the summer season of 1789, George Colman the Elder suffered a long-expected second paralytic stroke, which incapacitated him completely and forced his son to place him, in August, permanently in private care at Paddington.¹ By his experienced and astute management the elder Colman had established the "Little Theater in the Haymarket" solidly as a third major London theater, even though he was limited in his operations by the terms of Foote's original patent and his later annual license to the summer months, May 15 to September 15.² When the

elder Colman was stricken, the management devolved upon his son. Though his father had planned the season and made the necessary managerial arrangements, the younger Colman's management actually began in 1789, with John Bannister, Jr., as stage manager. His long tenure as manager of the Haymarket, 1789 to 1820 inclusive, may be divided into three distinct periods, with the first two periods forming a definite unit. From 1789 till the death of his father on August 14, 1794, he was, though actually in command, technically acting as agent for his father in whose name the license was obtained. From the latter date till early in the year 1805, he was sole proprietor and manager. From the season of 1805 till his retirement in 1820 he was joint owner and manager.

It is my purpose in this paper to present one of the problems in management that confronted Colman and to indicate briefly a trend in the development

¹ George Colman the Younger, *Random Records of My Life* (London, 1830), II, 287 ff., (hereafter referred to as *Random Records*); Peake, Richard Brinsley, *Memoirs of the Colman Family, Including Their Correspondence with the Most Distinguished Personages of Their Time*, two volumes in one (London, 1841), II, 216 ff., (hereafter referred to as *Peake*). I am indebted to these two volumes for most of the facts concerning the Colmans and the Haymarket. Cf. Eugene R. Price, *George Colman the Elder, Essayist, Dramatist, and Theatrical Manager, 1732-1794* (New York, 1935), pp. 296-97.

² Colman the Elder obtained his first theatrical experience as a dramatic author. His first experience in management he obtained at Drury Lane between 1763 and 1765, where he participated in the management with Lacey and George Garrick while David was abroad. From

1767 to 1770 he was one of four proprietors of Covent Garden and stage manager.

For the terms of Colman's purchase of the summer patent, see *Random Records*, I, 230.

of English drama influenced by the Haymarket during the first two periods. Both the problem and the trend in dramatic development were clearly evident when the younger Colman assumed the management. Both had arisen largely, though not entirely, as a result of the peculiar sufferance upon which the summer theater was allowed to operate.

The chief problem in management which the two Colmans had to face rose out of the rivalry of the two winter houses with the Haymarket and the jealous determination of their proprietors to protect the monopoly of their patents.³ Though the patentees had not the power to secure a revocation of the Haymarket license, they could and did curtail to a considerable extent the success and profits of that house by extending their own theatrical seasons, thereby depriving the summer theater of the services of the actors. They began this practice in the first season of 1777.⁴ By 1780, this encroachment on his season had become so grave that Colman called it to the attention of the public in an ingenious Prelude entitled *The Manager in Distress*, with which he opened his theater that year.⁵ When the elder Colman was forced to retire, the patentees apparently thought an opportune time had arrived to eliminate the dangerous rivalry of the summer theater. From 1790 to 1794 inclusive, Colman the Younger was not able to open his theater during a single season prior to June 13, thereby being deprived of nearly a month of his short summer period. On

June 15, 1792, in a Prelude entitled *Poor Old Haymarket, or Two Sides of the Gutter*, which delightfully satirized the building of the enormous new theaters, Colman again called this encroachment to the attention of the audience in a more bitter manner than his father had employed. His satire was received with applause.⁶

This rivalry probably explains in part Colman's refusal to come to terms with the Drury Lane managers in 1793 when they sought permission, after having to vacate the King's Theater in the Haymarket, to occupy the Little Theater. Consequently they had to agree, in order to keep their company together, to permit Colman to operate the Haymarket under the authority of their patent from September 19, 1793, to March 12, 1794, when the new Drury Lane Theater was opened. After this late beginning, Drury Lane extended its season in that year to July 2 and Colman was prevented from opening before July 8.⁷

Upon the death of his father in August 1794, Colman secured a license in his own name. In order better to wage his struggle with the patentees, he purchased the Haymarket Theater property. But with the completion of their new theaters, the patentees were determined to secure as much as possible, if not all, of the theatrical patronage. Between 1795 and 1802 Colman was prevented from opening his theater for any season before June 9. Colman again called the tyrannical conduct of the patentees to the attention of the public in a Prelude, *New Hay at the Old Market*, with which he opened the season of 1795. In this he again satirized with telling effect the

³ Nicholson, Watson, *The Struggle for a Free Theatre in London* (Boston and New York, 1906), traces in considerable detail the whole struggle over the patent monopoly.

⁴ Colman opened bravely on May 15 but the two winter houses refused to close. Colman then had to close until May 28. From May 28 till June 11, he performed only three nights in the week. *Random Records*, I, 239-41.

⁵ *Random Records*, II, 1-2.

⁶ Genest, John, *Some Account of the English Stage from the Restoration in 1660 to 1830*, (Bath, 1832), VII, 78 (hereafter referred to as Genest).

⁷ Genest, VII, 141-42.

enormous new theaters and the introduction of elephants, oxen, and horses upon their stages.⁸ Because of the retention of the actors at the winter houses, Colman was constantly on the lookout for new recruits for his establishment. One of these, the eccentric but gifted and popular Robert William Elliston, he brought from Bath in 1796. In 1802 Colman was not able to open until June 25, with a resultant financial failure for the season.

At the end of the unsuccessful season of 1802 Colman determined to free his theater of its dependence upon the winter houses by forming an independent Haymarket company. He posted a notice in the Green Room informing the actors that none of them need expect an engagement for the coming season unless he could be ready to open with the Haymarket Company on the 15th of May and remain with it until the 15th of September. A day before the close of the season the play bills announced that an address of importance would be delivered on the following evening. As Colman expected, he had a full house that night. At the close of the performance, Fawcett, Colman's stage manager since the loss of Bannister in 1796, came to the front of the stage and, after the customary thanks, presented Colman's address. In this he reviewed the entire struggle with the winter houses and announced his determination of forming an independent company.⁹ His announcement was received with generous applause.

In forming his company, Colman drew his new actors from the provincial theaters. Recruits were brought from Worcester, Weymouth, York, Portsmouth,

and Bath. By far his most valuable recruit was the excellent comedian, Charles Mathews, from York, whom, as Peake says, Colman came to consider his "trump card."¹⁰ With his independent company Colman was able, for the first time since 1789, to open the Haymarket on time on May 16, 1803. Again in 1804, Colman opened his theater on time, but Drury Lane remained open until the 12th of June and crippled the Little Theater both by competition and by the retention of John Bannister and R. Palmer. The audience by this time was fully aware of the strife; therefore, on the closing night of the season of 1804, when De Camp was forced to leave the Haymarket before the play was ended, they showed their displeasure in no uncertain terms. By this time, too, the press had taken up the struggle, with a preponderate sympathy for the Haymarket manager.

In this predicament and pressed by the debts incurred in the purchase of the property and by his extravagant mode of living,¹¹ Colman decided to sell shares in the Haymarket.¹² To his brother-in-law, David Edward Morris, he sold the first interest.¹³ He had hoped to secure Thomas Dibdin for a partner. Dibdin, however, had just bought, with his brother, Siddons' quarter share of the Sadler's Wells Theater. He had heard rumors, too, that the Haymarket property was about to be placed in Chancery. Though Colman satisfied him on this

¹⁰ II, 337. See Leigh Hunt's praise of Mathews in *Critical Essays on the Performances in the London Theatres* (London, 1807), pp. 144 ff.

¹¹ See S. J. Arnold's letter on Colman, reprinted in Peake, II, 418 ff. These strictures must be read, however, with reservations, for Arnold and Colman had been at odds since Colman was appointed Examiner of Plays, January 19, 1824, to succeed Larpet.

¹² Peake, II, 308.

¹³ Peake, II, 328-29, gives a revealing characterization of Morris and tells humorously of his early apeing of Colman in dress and manner.

⁸ *Random Records*, I, 318-23.

⁹ The full text of the address is reprinted from the *London Chronicle* of September 16, 1802, in Nicholson, *op. cit.*, pp. 153-55.

point, he refused the offer of a quarter share for four thousand pounds, because, as he says, he feared Morris in the concern.¹⁴ Colman disposed of shares to Morris, James Winston, and an attorney by the name of Tahourdine.¹⁵ Though Dibdin's judgment may not at the time of the transaction have been as fully determined by foresight as he intimates, the justness of his suspicion of Morris was fully borne out by the events of the final period of Colman's management. This period in the Haymarket's history was marked by strife between the proprietors that was far more bitter and disastrous than was the previous struggle with the winter houses. But, prior to this event, the Haymarket had made its contribution to the previously mentioned trend in dramatic development.

The specific limitation of the Haymarket season to the warm summer months not only left its manager largely at the mercy of the winter houses, but it also forced upon him an extremely difficult managerial problem in program selection. The elder Colman, thanks largely to the abilities of his principal actor Henderson, ran his first season on typical mid-eighteenth century managerial principles of presenting a large selection of standard English tragedies and comedies interspersed with various forms of lighter entertainment.¹⁶ But Colman soon came to realize that Garrick was right when he said that the taste of the summer audience demanded "daintier

picking."¹⁷ The providing of this popular "daintier picking" consisting largely of musical pieces and other "novelties" in form and staging,¹⁸ curtailed the performances of the solid drama, and changed the complexion of the Haymarket programs. Thus James Boaden, in writing of the season of 1784 and of the production of Holcroft's *Noble Peasant*, could say: "Novelty was literally the order of the day in the Haymarket house..."¹⁹ Colman the Younger, in recording and commenting upon the performances of each season under his father's management, is primarily concerned with the novelties.²⁰ The preponderant proportion of these novelties were musical pieces, largely comic operas, old and new. The authors of the new pieces included, among others, the younger Colman, Mrs. Inchbald, and Holcroft, but the vast majority of the new Haymarket operas before 1789 were written by John O'Keeffe.²¹ From the

¹⁷ See Garrick's epilogue to the comedy of *All in the Wrong*, Arthur Murphy's play, produced by Foote at the Haymarket in the summer of 1761, quoted in Cooke, William, *Memoirs of Samuel Foote, Esq., etc.*, (London, 1805), I, 108.

¹⁸ The two most striking examples of Colman's employment of novelty in staging occurred in his production of *The Manager in Distress*, May 30, 1780, and of *The Beggar's Opera Reversed*, August 8, 1781. Both were very popular and were repeated many times. The novelty in the first consisted in distributing some of his actors among the audience and introducing them to the stage over the orchestra from the boxes and pit. See *Random Records*, II, 1-2. The novelty in the second piece consisted in casting the male actors in the female roles and the women in the men's roles. It proved highly diverting. See Genest, VI, 202-03, and *Random Records*, II, 56. The elder Colman definitely influenced production methods in the late eighteenth century.

¹⁹ Boaden, James, *Memoirs of the Life of John Philip Kemble* (London, 1825), I, 181.

²⁰ *Random Records*, I, 315; II, 1-5, 14-18, 56-61, 112-14, 222-23, 277.

²¹ His operas produced at the Haymarket: *Tony Lumpkin in Town*; or, *The Dilettante*, 1778; *The Son-in-Law*, 1779; *The Dead Alive*, 1781; *The Agreeable Surprise*, 1781; *Harlequin Teague*; or, *The Giant's Causeway*, 1782; *The Young Quaker*, 1783; *The Birth-day*; or, *The Prince of Arragon*, 1783; *Peeping Tom of Coventry*, 1784; *A Beggar on Horseback*, 1785; *The*

¹⁴ Dibdin, Thomas, *The Reminiscences of Thomas Dibdin*, two volumes in one (New York, 1828), I, 172-75. Dibdin reprints Colman's Letters concerning the deal.

¹⁵ Peake, II, 308.

¹⁶ Some idea of this program of solid drama may be gained from the list of characters enacted by Henderson during the season of 1777: he acted Shylock seven times; Leon, in Fletcher's *Rule a Wife and Have a Wife*, three times; Richard III, three times; Bayes twice; Don John, in Beaumont and Fletcher's *The Chances*, three times; Falstaff, in *Henry IV*, seven times; Falstaff, in *The Merry Wives*, twice; and Hamlet nine times. See Genest, *op. cit.*, V, 589.

standpoint of the later development, however, those operas, such as Holcroft's *Noble Peasant*, 1784, and Colman's *Inkle and Yarico*, 1787, which departed in tone and subject matter from, though conforming in technique to, the standard pattern, are of more significance. The popularity of these musical pieces, appealing with great favor and partly shaping the taste of the heterogeneous audiences of that period, accounts in no small measure for the success of the Haymarket and the permanent establishment of that house. Through their presentation, season after season, Colman had forced Covent Garden to share with the Haymarket its hitherto undisputed leadership in the production of comic opera and musical pieces, a leadership which it had held since John Beard assumed the management in 1761.²² Their success had, by 1791, forced Kemble at Drury Lane to turn to the production of musical drama and to abandon his avowed intention of devoting his theater to the old standard English plays to the exclusion of works by contemporary playwrights.²³ But of greatest importance, the evolution of this musical drama resulted in the development of new dramatic techniques and stage practices in

an age when the discrediting of the neo-classic tenets had left the playwright without a standard procedure.

In solving the managerial problem of securing the continued public patronage at the Haymarket, Colman the Younger followed the practice of his father in the production of musical pieces. During his management from 1789 to 1805, he produced a major portion of the important examples of this type, his own writings forming the most significant contribution of any single author. Among the novelties which he produced were many musical farces, such as *Princ Hoare's My Grandmother*, 1793, and *The Three and a Deuce*, 1795, but of greater significance were the more serious operatic pieces. The chief examples of these were: Colman's *The Battle of Hexham*, 1789; John Scawen's *New Spain; or, Love in Mexico*, 1790;²⁴ the Hon. Francis North's *The Kentish Barons*, 1791; Colman's *The Surrender of Calais*, 1791; Francis' *The Enchanted Wood*, 1792; Colman's *The Mountaineers*, 1793; Rev. John Rose's *Caernarvon Castle; or, the Birth of the Prince of Wales*, 1793; James C. Cross's *The Purse; or the Benevolent Tar*, 1794; Benson's *Britain's Glory; or, a Trip to Portsmouth*, 1794; Thomas Morton's *Zorinski*, 1795; George Brewer's *Bannian Day*, 1796; O'Keeffe's *Alfred; or, The Magic Banner*, 1796; Cumberland's *Don Pedro*, 1796; Colman's *Iron Chest*, 1796;²⁵

Siege of Curzola, 1786; *The Prisoner at Large*, 1788; *The Basket-Maker*, 1790; *The London Hermit; or, Rambles in Dorsetshire*, 1793; and *Alfred; or, The Magic Banner*, 1796. The majority of these were set to music by the Haymarket director of music, the famous Dr. Samuel Arnold, who joined the Haymarket staff in 1776 and continued on it till his death in 1802. On O'Keeffe, see Peake, II, 229-33. The dates of production given in John O'Keeffe, *Recollections of the Life of John O'Keeffe Written by Himself*, two volumes (London, 1826), are not always accurate.

²² See Davies, Thomas, *Memoirs of the Life of David Garrick*, rev. ed. (London, 1780), II, 61-65. Davies says that Beard's success in comic opera at Covent Garden in 1763 was so great as seriously to curtail the profits at Drury Lane, and that this success was an important consideration in Garrick's decision to take a vacation abroad. Colman the Elder was stage manager at Covent Garden between 1767 and 1770.

²³ Boaden, *op. cit.*, II, 52.

²⁴ Not to be confused with Mrs. Inchbald's piece of the same name, produced at Covent Garden in 1788. See Genest, VII, 4. Nicoll does not list this among Siddons' works.

²⁵ First produced at Drury Lane on March 12, 1796, where it failed. After the great success of Kemble in Colman's *The Mountaineer* at the Haymarket in 1793, the patentee of Drury Lane had asked Colman to write a similar piece for that theater in which Kemble could display his peculiar abilities. The failure of this play stung Colman. He published it with a twenty-page preface in which he bitterly charged Kemble with direct responsibility for its failure. Its later success at the Haymarket, with Elliston in Kemble's role of Sir Edward Mortimer, tended to

James Boaden's *Italian Monk*, 1797; Thomas Holcroft's *The Inquisitor*, 1798; James Boaden's *Cambro-Britons*, 1798; Rev. Moultru's *False and True*, 1798; Henry Heartwell's *The Castle of Sorrento*, 1799; Joseph Holman's *The Red-Cross Knights*, 1799; Charles Kemble's *The Point of Honor*, 1800; James Boaden's *The Voice of Nature*, 1802; Boaden's *The Maid of Bristol*, 1803; William Dimond's *The Hunter of the Alps*, and Thomas J. Arnold's *Foul Deeds Will Rise*, both produced in 1804.

In their technical structure these pieces are in the characteristic form of that genre. They have the typical element of low comedy scenes and characters interspersed with those of a more serious nature, a characteristic which Isaac Bickerstaff in his "Preface" to *The Maid of the Mill* had pointed out was necessitated in the composition of an opera by the requirements of the music. The story of the piece is told through spoken dialogue, but at moments of emotional intensity and in certain comic situations the dialogue gives way to song.²⁶ The numerous scenes usually end with songs, and the acts end with duets, trios, quintettos, or elaborate finales, offering opportunities for effective groupings, music, spectacle, and a climactic ending. The songs are both serious and comic. A low comedy character, frequently an Irishman, is introduced in the *dramatis personae* as the singer of the comic pieces.²⁷ Both the low comedy and

serious characters are carefully paired. Additional similarities in structure could be pointed out, but let it suffice to note that the critics of the day almost without exception called these pieces operas and that frequently only the music and the songs were published, or at least published separately.

But on the title-pages of the published copies only two of the above pieces, *Caernarvon Castle* and *Children in the Wood*, are called operas. Most of the others are labeled with the noncommittal title, "a play,"²⁸ thereby revealing a difference which their authors felt. This uncertainty in descriptive titles is not only indicative of the neoclassic background of their authors, but it is also an indication of the growing gulf between literature and drama. An examination of these pieces reveals that their chief differentiation from the former comic opera lies in their deepened seriousness of tone and subject matter, with a resultant emotional intensification. The attempt to attain this seriousness of tone resulted in the author's frequent adoption of blank verse for his serious scenes with prose for the comedy scenes and characters.²⁹ The central story of each of these pieces, like that of comic opera, is about a love affair in which the hero eventually wins the heroine, and a wholesale marrying of all the paired characters happily concludes the play. But the love stories of these pieces are usually set within a complicated historical or domestic situation. The suspense is intense and serious. The successful production of these pieces required the securing from

support Colman's accusations. See Boaden's defense of Kemble in his *Life of John Philip Kemble*, II, 156-59. See also Adolphus, J., *Memoirs of John Bannister* (London, 1839), I, 367-68. Genest, VII, 234-36, quotes a part of Colman's "Preface."

²⁶ See Bickerstaff, Isaac, "To the Reader," *Leucothoe, A Dramatic Poem*, 1756, for a statement of the right practice in the composition of dialogue and music in an opera.

²⁷ One of the major reasons for the introduction of an Irish character in so many of these pieces, even at the expense of probability, was Jack Johnstone's inimitable and popular repre-

sentation in these parts. See *Memoirs of John Bannister*, I, 311-12.

²⁸ *The Purse* is entitled "a musical drama." It should be pointed out that it and the above named "operas" differ from the other pieces of this period but are still in the tradition. *Cambro-Britons* is called "an historical play," and *The Castle of Sorrento* is merely described as "a piece in two acts."

²⁹ Especially *Kentish Barons*, *Mountaineers*, *Cambro-Britons*, and *Italian Monk*.

the spectators of an emotional identification with the sympathetic characters and the arousing of antipathy towards the antagonist. This essential forced the author and producer into at least a seeming realism of exposition, characterization, dialogue, setting, and staging.³⁰

In the "Advertisement" to his *The Battle of Hexham*, Colman says:

If a play exhibits incidents of the former Ages, it appears to me, that, the language of the Characters, like their dresses, should remind us of *Old Times*, the better to help the illusion. For this reason, when writing (nearly twenty years ago) "*The Battle of Hexham*," and some other pieces since, I have resorted to Shakespeare, as the best model for my purpose.

In this statement, Colman reveals the source of the above noted changes in this form of drama. He and the other authors under the influence of the Eliza-

bethan revival of their time were definitely seeking to imitate the drama of the former age. Colman referred to his plays as "the mid'd kind of drama,"³¹ and Genest usually labels these pieces an "unnatural mixture of Tragedy, Comedy, and Opera," but after the production, in 1802, of Holcroft's *A Tale of Mystery*, they were called melodramas, a term borrowed from the French. Although other elements influenced its eclectic development, early English melodrama is essentially a combination of typical English opera with English tragi-comedy called forth by the manager's attempt to satisfy the traditional English taste for a drama of action and complicated situations. In this development lies the chief significance of the younger Colman's plays and of his management of the Haymarket from 1789 to 1805.³²

³⁰ For an account of the realistic staging of *The Kentish Barons*, see Boaden, *Life of John Philip Kemble*, II, 42-43. In most of the contemporary comments on these plays there is discussion of the realism or the violations of realism in the writing and staging.

³¹ *Random Records*, II, 289.

³² The author is indebted to the Huntington Library for access to much of the material used in the preparation of this study.

AN EXPERIMENTAL EVALUATION OF SUGGESTION RELAXATION

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I

IT IS well known that muscular hypertonicity is a concomitant of certain speech defects.

Some speech correctionists favor attacking hypertonicity directly, usually through relaxation exercises. Relaxation has, therefore, enjoyed a long, if somewhat varied, popularity as one technique in the treatment of stuttering and certain other problems.

Not all relaxation methods have been evaluated experimentally. The evidence available in some instances is almost entirely subjective. This is particularly true of the so-called suggestion types of

relaxation. The need is for objective determination of their effectiveness.

This paper reports an investigation of relaxation. The purposes were two: (1) to refine a technique for studying both relaxation methods and the carry-over of reduced tension into speech activities, and (2) to determine the responses of untrained, normal speaking subjects to suggestion relaxation of the heaviness variety.

II

PROCEDURE

Considerable recently amassed evidence indicates that—when proper precautions are taken—palmar resistance is

a good indication of general bodily tonus.¹ Therefore this type of psychogalvanic reflex was used in the present experiment to gauge subject response. Specifically, the procedure employed was a modification of Lovell's.²

Palmar resistance was obtained with an improved Darrow Behavior Research Box.³ This instrument measured resistances up to 199,900 ohms. It was connected to the subject by means of wet electrodes, which consisted of zinc discs faced with cotton plugs saturated with 4% zinc sulphate solution.

Undergraduate students in the Northwestern University School of Speech served as subjects. In all, ninety students (thirty men and sixty women) were used. Care was taken to select persons with little or no technical knowledge of relaxation. The subjects were divided into three major groups of thirty students apiece (ten men and twenty women). Each group was later split into two sections of fifteen students (five men and ten women). The various groups were designated as follows:

1. Control group (C)—no directions to relax;
 - a. CN—no speech instructions,
 - b. CT—instructions to talk.
2. Relax group (R)—simple command to relax without instructions on how to do so;
 - a. RN—no speech instructions,
 - b. RT—instructions to talk.

3. Suggestion group (S)—detailed instructions on how to relax;
 - a. SN—no speech instructions,
 - b. ST—instructions to talk.

The experiment was conducted in a quiet but not entirely sound proof room. This room contained office furniture and a comfortable couch. All apparatus was placed where subjects could not see it when lying on the couch. Incidentally, each subject reclined during the entire experiment.

All instructions were presented by means of phonograph records. This procedure kept the instruction factor constant while allowing several experimenters to be used. It was thus possible to have an experimenter of the same sex as the subject,—an extremely important requirement since both subject and experimenter were in the same room.

Preliminary directions covering the first part of the experiment (known as the Basal Period) were the same for all subjects. These directions consisted of two parts: (1) an introductory explanation to prepare the subject for attachment of the apparatus and (2) directions to lie quietly until further instructions were received. Incidentally, neither before the experiment nor during the preliminary instructions were the subjects told that relaxation was being studied. This precaution was necessary to avoid having subjects think during the Basal Period that any specific behavior was expected of them.

The Basal Period was necessary to eliminate palmar resistance differences due to activities and emotional states preceding the experiment.⁴ The method of eliminating such differences was simple. Each subject was allowed to lie unmolested. Under such circumstances resistance rose progressively—usually for

¹ Freeman, G. L., "The Postural Substrate," *Psychological Review*, XLV (1938), 324-334; Wenger, M. A., and Irwin, C. C., "Fluctuations of Skin Resistances of Infants and Adults and Their Relation to Muscular Processes," *University of Iowa Studies in Child Welfare*, XII, 143-179.

² Lovell, G., "Physiological and Motor Responses to a Regularly Recurring Sound: A Study in Monotony," Ph.D. Dissertation, Northwestern University, 1941.

³ This apparatus was made available through the kindness of Professor J. J. B. Morgan, Department of Psychology, Northwestern University.

⁴ Failure to take this factor into account may be responsible for the lack of definition in early psychogalvanic reflex experiments.

from 8 to 12 minutes—and then became almost stationary. When the latter condition was achieved, the basal level had been reached. In practice, resistance readings were taken each minute. The basal level was considered reached when variations over four successive readings did not exceed 4,000 ohms.

As soon as the basal level had been established, the experiment moved into Period 2—which lasted ten minutes. Again, resistance readings were taken at one minute intervals. It was at the beginning of Period 2 that the C, R, and S groups were differentiated. No additional instructions were given the C group. Members of the R group received a simple request to relax as thoroughly and completely as possible. This constituted the only directions received by them. In contrast, the S group underwent a suggestion relaxation procedure which took the full period. Each subject was asked to imagine sensations of weight and numbness in different parts of the body.⁵ The instructions were spoken soothingly and with a slow, rhythmic intonation.

The final stage in the experiment was Period 3. The aim here was to discover what effects Period 2 conditions had upon palmar resistance during a subsequent three minutes of speaking. At this point C, R, and S groups were each divided into two sub-groups. The CN, RN, and SN sections served as controls—the members of each being allowed to lie without further instructions for

⁵ Space limitations prohibit inclusion of the full instructions for suggestion relaxation. However, a sample paragraph will illustrate their nature:

"Next, imagine a dull numbness moving into your fingers. There is a lifeless emptiness in your fingers, but as you think about this you become particularly aware that your fingers seem to be losing their power of movement. They are numb, lifeless. They seem to drift farther from you. You are not quite certain of their position. Let that sensation grow. Let it become more intense."

the final three minutes. In contrast, subjects in the CT, RT, and ST sections carried out a series of vocalization exercises and spoken responses.⁶ Incidentally, resistance readings were taken every half minute during Period 3.

After Period 3 was over, each subject filled out a questionnaire designed to explore subjective experiences during the experiment. The questionnaire was similar to that used by Lovell.⁷ On subsequent analysis, it was discovered that these questionnaires did not yield noteworthy inter-group differences. Therefore, no further mention will be made of this aspect of the study.

Summarizing the foregoing, the effects of detailed suggestion relaxation were compared with simple directions to relax and with no instructions. The carry-over into speech activity was then investigated. Subject response was measured by means of palmar resistance.

III

TREATMENT OF DATA

Palmar resistance readings ranging from 9,000 to 180,000 ohms constituted

⁶ The instructions employed were designed to make increasingly complex speech demands. They were as follows:

"Before we conclude the experiment you are to do a few simple speech exercises. As you say the different things I request, talk naturally and at medium loudness. First say, 'ha : : : : ' (Pause to allow response). Again.

Now say, 'ha : ha : ha : ' —————
Again ————— Next say, 'ha : h₂ : hi : h₂ : ha :

Now say, 'ha : h₂ : hu : h₂ : ha : ' —————

Repeat this, 'How are you?' —————

'I am well.' ————— Count from 1 to 10.

Count backwards from 10 to 1.

Count from 0 to 36 in steps of 3: for example, 0-3-6 and so on. Now start. —————

Count backwards from 36 to 0 in steps of 3.

Say 'Jack and Jill.' ————— That is,

the nursery rhyme 'Jack and Jill.' —————

Say the nursery rhyme 'Little Miss Muffett.' —————

Answer these questions. What is your name? ————— Where do you live? —————

What high school did you attend? —————

Do you like Northwestern University? —————

Are you a freshman, or do you have some other classification? ————— Now the experi-

ment is over. Thank you very much."

⁷ *Op cit.*, 56.

the data of the present experiment. In their raw form, however, these data were not easily analyzable. Numerically similar shifts were not equivalent at different points within the range of resistances covered. This handicap was overcome by transforming resistance values into log conductance scores.⁸ It is important to note that the higher the resistance the lower was the log conductance score. In other words, on the basis of the assumption that palmar resistance increased as general bodily tension dropped, a higher log conductance score indicated greater tension.

Log conductance scores were used as the base for three different measures of subject response. It was these measures which were given statistical analysis. They were as follows:

1. *Final Average* was the mean of log conductance scores for the latter part of the period in question. The last four scores were used to obtain Final Average for the Basal Period. The same was true for Period 2. The last three scores were used for Period 3. As is obvious, Final Average was an indication of the subject's resistance at the end of the period under consideration.

2. *Difference in Final Average* was obtained by subtracting the Final Average for one period from that for a later period. This measure indicated the shift in resistance from one period to another. When the result was a negative number, the resistance was higher (tension less) at the end of the second period. Differences in Final Average were computed between Basal and Period 2, between Period 2 and Period 3, and between Basal and Period 3.

3. *Range Score* was obtained by subtracting the first log conductance score within an experimental period from the last one for the same period. This represented the shift in resistance within the period. Here, too, a negative number indicated higher resistance (decreased tension).

⁸ Two steps were necessary in this transformation. First, 1,000,000 was divided by the palmar resistance. This gave conductance in micromhos. Log₁₀ of the conductance value thus obtained was multiplied by 100. The result was the log conductance score.

The statistical tools used to evaluate the experimental data were Fisher's analysis of variance and analysis of covariance.⁹ These methods have two important advantages. First, when an experiment is properly designed, they yield reliable results with small samples. Second, the results they yield are in reality tests of whether groups subjected to different procedures remain part of the same population. When the measures show that the groups did remain part of the same population, one obviously concludes that different procedures did not produce distinctive effects. On the other hand—provided proper precautions to eliminate other causes of variation between groups were taken—the opposite results indicate that the various experimental methods had distinctive influences.

Incidentally, the results of analyses of variance and covariance are expressed as F values. The significance of any particular value of F varies with the degrees of freedom—that is, with the number of methods being compared and the number of cases involved. To illustrate: for 5 and 80 degrees of freedom an F of 2.33 is significant at the 5% level. In other words, differences as large as those found in the experiment would appear only 5 times in 100 in random samplings from the same population. One must assume under these circumstances either that a very unlikely event occurred or that the differences between groups were not due alone to chance variations.

When a significant F is obtained, the *t* test may also be applied. This test compares any two groups. It therefore gives additional information whenever several groups are involved in the same experiment. Specifically, this test yields a *t* value which indicates the significance

⁹ For a full discussion, see Lindquist, E. F., *Statistical Analysis in Educational Research*, (New York, 1940), pp. 48-207.

level reached by the difference between two group means. Thus, while F and t are evaluated in somewhat the same manner, t relates to a pair of groups selected for further comparison.

Any F or t of 5% significance was considered in the present study as indicative of actual differences between groups. However, as will be noted in the next section, most of the F values were either very low (evidence that the groups represented the same population) or else considerably higher than that demanded at the 5% level.

might be expected to answer. Therefore, the simplest way to discuss the findings is to consider each question in turn.

A. A preliminary question is whether the C, R, and S groups were similar during the Basal Period. Obviously, at this point in the experiment the three groups should have represented samplings from the same population. Two analyses of variance revealed that this was the case. (See Table IV) Analysis 1 (Final Averages) yielded $F = .46$, while Analysis 16 (Range Scores) gave $F = .05$. It may be said immediately that during the

TABLE I
GROUP MEANS ON Final Averages DERIVED FROM LOG CONDUCTANCE SCORES

Group	Basal Period	Period 2	Period 3
CN	130.96	126.65	124.35
CT	123.18	120.96	164.01
C, or CN + CT	127.07	123.81	...
RN	121.23	120.46	116.57
RT	125.85	123.61	160.82
R, or RN + RT	123.54	122.04	...
SN	127.98	133.41	129.43
ST	136.77	138.87	173.71
S, or SN + ST	132.38	136.14	...

IV

RESULTS AND INTERPRETATIONS

As pointed out earlier, it seems tenable in the light of recent investigations to assume that palmar resistance gives an indication of general bodily tension. This is the assumption underlying the discussion which follows.

The results obtained in the present experiment are summarized in Tables I through IV. The first three tables give group means in log conductance units. More specifically, Table I presents Final Averages; Table II covers Differences in Final Average; and Table III reports Range Scores. In contrast, Table IV contains results of variance and covariance analyses. These analyses covered a variety of inter-group comparisons which bear on the questions that the experiment

Basal Period differences between C, R, and S groups are easily accounted for on the basis of chance distribution in random selections from the same population.

B. Another preliminary question was the possibility of sex differences. An analysis of variance (not shown in Table IV) in which sixty women were compared with thirty men on Final Averages for Period 2 yielded $F = 1.37$. Since under the conditions involved an F of 3.96 was needed for 5% significance, one concluded that the two sexes responded similarly. (As a precaution, however, sex ratio was maintained constant in all groups studied.)

C. The major question investigated was the relative influence on palmar resistance of (1) no instructions, (2) a

simple command to relax, and (3) detailed instructions in suggestion relaxation. Statistical analysis and a consideration of individual scores revealed interesting and somewhat surprising results.

The three aforementioned methods produced different effects during Period 2. Subjecting Final Averages for the Basal Period and for Period 2 to analysis of covariance (Analysis 3 in Table IV) yielded $F = 3.08$. Since for the conditions in question an F of 3.11 was significant at the 5% level, the result

to relax produced more relaxation than did the suggestion instructions.

The foregoing finding, while definite, was not of the magnitude which the Final Averages would suggest. Systematic variations due to group personnel are revealed by Table I. Throughout the experiment, means for the S group were consistently highest and those for the R group most often lowest. Therefore, the results involving Differences in Final Average give a truer picture. Thus, Analysis 7 (variance for differences between Period 2 and Basal) yielded $F =$

TABLE II
GROUP MEANS ON Differences in Final Average DERIVED FROM LOG CONDUCTANCE SCORES

Group	Period 2 Minus Basal	Period 3 Minus Basal	Period 3 Minus Period 2
CN	-4.31	- 6.61	- 2.29
CT	-1.77	+41.32	+43.09
C, or CN + CT	-3.04	.....	.....
RN	- .84	- 4.84	- 4.00
RT	- .88	+36.42	+37.30
R, or RN + RT	- .86	.....	.....
SN	+4.51	+ .66	- 3.85
ST	+1.46	+36.31	+34.85
S, or SN + ST	+2.99	.....	.....

indicated real differences among the groups. Furthermore, the t test showed that the difference between group means for S and R was significant at the 1% level, that C and S had a difference with 5% significance, but that the C and R difference was not significant. One concludes that subjects undergoing suggestion relaxation responded in a distinctive manner but that simple directions to relax had about the same effect as no instructions at all. Moreover, comparison of group means for Period 2 reveals an interesting fact. (See Table I) These means were as follows: C = 123.81, R = 122.04, and S = 136.14. Since a higher score indicates less palmar resistance and (presumptively) greater tension, lying quietly or simply being told

13.13 in circumstances where $F = 3.11$ had 5% significance. It is again apparent that different instructions produced different effects during Period 2. Further clarification is given by the t test. It revealed 1% significance when the S group was compared with either the C or the R group. The t for the C and R comparison had nearly 5% significance. Group means were as follows: C = -3.04, R = -.86, and S = +2.99. (See Table II) These figures show that during Period 2 tension continued to decrease slightly within the C group, remained approximately the same for the R group, and increased somewhat within the S group. The shifts were not great in magnitude, but the previously mentioned analysis of variance showed

them to be highly significant. Outstanding among these findings is further confirmation of the tendency for suggestion instructions to interfere with fullest relaxation. In fact, the results suggest that lying quietly reduced tension more than did either type of instruction used in the experiment.

The Range Scores throw additional light on the influences of Period 2 instructions. Analysis 18 (covariance utilizing Range Scores for Basal Period and Period 2) yielded an *F* of 3.18. Since here, too, an *F* of 3.11 was needed for

relative nor absolute depth of relaxation as did the C and R groups. Hence, the extreme negative Range Scores characteristic of the S group were the result of a sudden increase in tension at the beginning of the period. This allowed a large subsequent decrease.¹⁰ To a lesser degree, the same trend was shown by the R group. In other words, the act of giving the subject verbal instructions produced tension. For simple directions to relax, this tendency was not pronounced enough to have statistical significance. However, suggestion relaxation

TABLE III
GROUP MEANS FOR Range Scores DERIVED FROM LOG CONDUCTANCE SCORES

Group	Basal Period	Period 2	Period 3
CN	-14.75	- 5.28	- 1.17
CT	-18.97	- .85	+10.23
C, or CN + CT	-16.86	- 3.07	.....
RN	-21.04	- 9.01	- 2.37
RT	-14.02	- 7.37	+15.41
R, or RN + RT	-17.53	- 8.19	.....
SN	-19.59	-10.60	- 7.19
ST	-11.97	-12.80	+ 8.15
S, or SN + ST	-15.78	-11.70	.....

5% significance, one again concludes that during Period 2 the three groups did not represent the same population. In this instance, however, the *t* reveals that only the group means for C and S were significantly unlike. The 2% level was reached in this case. The C and S groups, in other words, represented extremes. The R group represented an intermediate state. Furthermore, as shown by Table 3, group means during Period 2 were -3.07 for C, -8.19 for R, and -11.70 for S. Each group evidenced a decrease in tension as Period 2 progressed. Interestingly enough, this decrease was least for the C group and greatest for the S Group. These facts, however, must not be misinterpreted. As pointed out in previous paragraphs, the S group reached neither the same

instructions resulted in a marked and statistically reliable tension rise which had not completely disappeared at the end of the period.

The preceding discussion indicates clearly that the three Period 2 conditions which were studied produced different palmar resistance responses. The singular feature is that suggestion relaxation instructions yielded a sharp initial and slight final increase in tension. One might reason from this that for the suggestion method the need to follow a continuous train of directions held the subject's attention and thus inhibited full relaxation.

D. Period 3 was designed to inves-

¹⁰ This response pattern was clearly evident in the individual records for subjects in the S group.

12	Cov.	CT, RT, ST	Diff. between Period 2 and Basal; between Period 3 and Period 2	2 and 41	3-23	1.02	Differences in	
							Range Scores	
13	V.	CN, CT RN, RT SN, ST	Diff. between Period 3 and Basal	5 and 84	2.33	18.50	any 2 N sub-groups any 2 T sub-groups any N and any T sub-group	— — 1% greatly exceeded
14	V.	CN, CT RN, RT SN, ST	Diff. between Period 3 and Period 2	5 and 84	2.33	26.55	any 2 N sub-groups any 2 T sub-groups any N and any T sub-group	— — 1% greatly exceeded
15	Cov.	CN, CT RN, RT SN, ST	Diff. between Period 2 and Basal; between Period 3 and Period 2	5 and 83	2.33	27.35	any 2 N sub-groups any 2 T sub-groups any N and any T sub-group	— — 1% greatly exceeded
16	V.	C, R, S	Basal	2 and 87	3.11	.05	—	—
17	V.	C, R, S	Period 2	2 and 87	3.11	3.20	C and R C and S S and R	— 2% —
18	Cov.	C, R, S	Basal and Period 2	2 and 86	3.11	3.18	C and R C and S S and R	— 2% —
19	V.	CN, RN, SN	Period 3	2 and 42	3.22	2.56	CN and RN CN and SN SN and RN	— 5% 10%
20	V.	CT, RT, ST	Period 3	2 and 42	3.22	.46	—	—
21	V.	CN, CT RN, RT SN, ST	Period 3	5 and 84	2.33	4.46	any 2 N sub-groups any 2 T sub-groups RT and any N sub-group SN and any T sub-group CT and any N sub-group ST and RN or CN	— — 1% 2% or better 5% or better about 10%

tigate the effects of suggestion relaxation on tension level during subsequent speech. It will be recalled that for this part of the experiment the three original groups were each subdivided—half the subjects in each serving as controls while the other half engaged in speech exercises.

A wide variety of analyses revealed one fact clearly: namely, subjects who were requested to speak showed an immediate and marked tension increase. For example, Analysis 6 (variance for Period 3 Final Averages) yielded an F of 36.78 under conditions where an F of 2.33 represented 5% significance. The t test showed that differences between any two N or any two T sub-groups were insignificant but that 1% significance was greatly exceeded whenever any N was compared with any T sub-group. The magnitude of shifts accompanying speech activity is indicated by the group means. These were as follows: CN = 124.35, CT = 164.01, RN = 116.57, RT = 160.82, SN = 129.43, ST = 173.71, (See Table I). Similar results were obtained when Differences in Final Average were studied. Analysis 13 (variance for the differences between Period 3 and Basal) yielded an F of 18.50; Analysis 14 (variance for differences between Period 3 and Period 2) gave an F of 26.55; and Analysis 15 (covariance based upon Period 2 and Basal differences and upon Period 3 and Period 2 differences) furnished an F of 27.35. In all these cases only 2.33 was needed for 5% significance. Furthermore, the t test in each instance gave results identical with those described above. These findings show conclusively that the request to speak produced marked changes in palmar resistance. Table II reveals that subjects in the T sub-groups (those who spoke) underwent tension increases of about 40 log conductance units.

Similar but somewhat less definite

results were obtained with the Range Scores. Analysis 21 (variance for Period 3) gave an F of 4.46, where 2.33 was needed for 5% significance. The t test again failed to distinguish between N sub-groups or between T sub-groups. The RT sub-group was differentiated from any N sub-group at the 1% level; SN deviated from any T sub-group with at least 2% significance; and CT stood apart from any N sub-group with at least 5% significance. However, the difference between ST and either RN or CN reached only the 10% level. The meaning of these figures is apparent from Table III. The group means showed a definite pattern. For each N sub-group the mean was a negative number. The values were so small for CN (−1.17) and RN (−2.37) that they indicated practically a static condition. However, the SN mean of −7.19 was great enough to suggest a tendency for relaxation to become definitely greater in the period of silence following suggestion instructions. With the T sub-groups the picture was reversed. In each instance the mean was a positive number. The mean was greatest for RT (+15.41), intermediate for CT (+10.23), and least for ST (+8.15). These figures all suggest a tendency for tension to increase as speech continued. This conclusion, however, must be accepted with two cautions. For one thing, the degree of reliance which can be placed on these trends is indicated by the t tests already mentioned. Second, the tendency may have been a function of the instructions employed. There is no indication of how long the tension increase would have continued nor of whether it would have occurred in other types of talking.

The analyses discussed above did not differentiate between N sub-groups nor between T sub-groups. In general, as can be seen in Table IV, this was true of other analyses involving these

sub-groups. Two exceptions should be pointed out. One exception is found in Analysis 5 (covariance comparing CT, RT, and ST Final Averages for Basal Period and Period 3). Here, F was only 2.52 under conditions where 3.23 was needed for 5% significance. However, the t test revealed that RT and ST deviated sufficiently to reach 5% significance.¹¹ The second exception involves Analysis 19 (variance on Period 3 Range Scores for CN, RN, and SN sub-groups). As in the preceding instance, an F of 2.56 failed to reach the 5% significance value of 3.22. However, the t test showed the deviation between CN and SN to be at the 5% level. The two exceptions just discussed raise the presumption that there was some carry-over from Period 2 to Period 3. In each instance, the relationships existing were similar to but not as statistically reliable as the relationships revealed by the corresponding analyses of Period 2 data.

One must conclude from the information at hand that very little carry-over occurred from Period 2 to Period 3, but that hints of carry-over exist which warrant further study of this question.

V

SUMMARY AND CONCLUSIONS

The present experiment investigated the influence of suggestion relaxation upon general bodily tension (as revealed by palmar resistance measures). Three groups of thirty subjects were employed. The control group received only the necessary preliminary directions. The second group was given simple orders to relax. The third group underwent a complete suggestion relaxation of the type stressing sensations of heaviness. Following the relaxation period, half

the subjects in each group served as controls and the other half were asked to do a series of speech exercises. The purpose of this last was to study the effect of speech on the palmar resistance level reached by each group in the preceding period.

Palmar resistance measures were transformed into log conductance scores. Several arrangements of the data were subjected to analyses of variance and covariance. In other words, the experiment utilized small sample methods.

This treatment of data yielded the following results:

1. During the preliminary resting period (Basal), the three groups represented samplings from the same population.
2. Subject response was not significantly related to sex.
3. The three methods produced different effects during the time allotted for relaxation (Period 2). Lying quietly or simply being told to relax produced greater palmar resistance (more relaxation) than did the suggestion method. In fact, tension actually increased in the latter case.
4. The act of giving the subject instructions to relax produced a decrease in palmar resistance (increased tension). This effect was more marked for the suggestion method than for the simple direction to relax.
5. Differences which existed between groups at the end of the relaxation period tended to be obliterated in the last part of the experiment. This was true either when subjects who spoke were compared with one another or when subjects who remained quiet were compared. Thus, there was little evidence of differential carry-over following suggestion relaxation.
6. Subjects who were requested to speak showed an immediate and marked drop in resistance (increased tension). Subjects who remained silent did not show this change.

Although what is here reported throws doubt upon the belief that suggestion relaxation is a valuable method of reducing bodily tension, further research is necessary before the belief can be fully discarded. For one thing, the theory that palmar resistance is an indication of

¹¹ Applying the t test is justifiable in an instance where F is not significant only if markedly different methods were employed with the groups under consideration. This condition was met here.

general bodily tension needs additional substantiation. Moreover, it must be remembered that the present study tested a particular method of suggestion relaxation. Other methods might have proven more effective. Then, too, the present study dealt with untrained subjects. Subjects who had undergone extended training in suggestion relaxation might have yielded quite different results.

As a final word, the foregoing investigation—in addition to yielding specific

experimental findings—represents a procedure for testing the relaxation methods used by speech correctionists. Further research in this area will allow not only fuller evaluation of currently used methods but also the development of more reliable and better understood ways of teaching relaxation. Certainly, the results reported above reaffirm the need for full experimental check on the effectiveness of relaxation in speech therapy.

A COMPARATIVE ANALYSIS OF THE RESULTS OF TESTING INDIVIDUAL HEARING-AIDS IN A SCHOOL FOR THE DEAF

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I. INTRODUCTION

The importance of the hearing-aid in the education of the deaf and hard-of-hearing child cannot be over-emphasized. All residual hearing must be used. The group aid is one answer to this problem. It is economical as well as powerful. Yet, it does not possess the characteristics of compensatory adjustment and can only be used in the room where it is installed. The limited time when a child has access to the group aid is insufficient after he has matured enough to assume the responsibility of an individual aid. The latter seems the logical means of adjustment because it can be worn practically all the time.

The perception of speech is inextricably associated with the production of speech. Hearing is indispensable to the developing and maintaining of satisfactory inflection, intonation, accent, stress, and quality of voice. Through the use of the hearing-aid the child is better able

to hear more of the whole speech pattern, and the approach to good, intelligible speech is greatly shortened.

Hearing-aids are only what the term implies. Even though their sole purpose is to amplify sound, the amplification characteristics of various aids differ greatly. An individual should be fitted with the aid most nearly commensurate with his type of hearing loss—an instrument wherein the frequencies most affected are amplified and those approximating the normal threshold are subdued proportionately. "Fitting" an aid to an individual is not an easy matter, however. The various factors which must be considered in this process are not all capable of being measured. Consequently, the aid should be tested in actual use while being worn by the individual.

It is an accepted fact among educators that almost all deaf and hard-of-hearing children can be benefited to various extents by the use of hearing-aids. It is the aim of this study to determine the efficacy of different makes of hearing-aids, specifically fitted to children with

* This is the present affiliation of Miss Utley only. When this study was made the authors were located at the South Carolina School for the Deaf, Cedar Spring, S. C.

various degrees of hearing loss, and compare the results of this testing in a way as concrete as possible. It was not the intent of the investigators to test the state of repair or degree of operating efficiency at the time of testing, nor the degree to which the aid fitted the hearing needs of the subject upon whom it was used. It would be unfair to compare aids unless they were in optimum repair. As to the latter, the entire responsibility of the fitting rested with the various trained consultants representing their respective companies. The sole purpose of this study is to determine by means of comparison which hearing-aid benefits the wearer to a greater extent than do others.¹ It is true that not all of the best aids were represented, but this was due to the fact that only those aids supplied by manufacturers willing to cooperate at the time they were approached, were made available.

II. PROCEDURE

During the school year, 1940-41, five leading distributors of vacuum-tube hearing-aids were consulted regarding the possibility of obtaining the loan of aids for experimental purposes at the South Carolina School for the Deaf. Two companies responded and offered whole-hearted co-operation. At the beginning of the next year, 1941-42, both companies contributed a number of new individual instruments specifically designed to fit different types of hearing loss. It was only through the willing co-operation of these companies that this study was made possible. The expense involved in the up-keep of these instruments was assumed either by the children wearing the aids or by the school. One child upon entering this school in

September, 1941, owned an aid manufactured by a company different from the two mentioned above.²

The three different makes of aids used in this study were all vacuum type aids. Each child who figured in this experiment owned his own ear-tip since the mold was made particularly for him. The individual ear-tips were interchangeable with all instruments used and insured optimum sound reception in every case. Before each testing period every instrument was carefully checked by the investigators to be sure that it was in good repair and operating efficiently. New batteries were supplied in each test. Every aid was operating at peak efficiency. The instruments had served the respective children during a trial period prior to the time of the tests. Therefore, the volume controls were set by each individual at the place most pleasurable and satisfactory to him. In each case the child was accustomed to the wearing of the aid. Finally, as has been stated before, each child, whether he was tested with one, two, or three different makes of instruments, used the one or ones specifically fitted to his hearing loss as determined by the authorized representatives of the different commercial companies.

Twenty-one children were selected from the Intermediate and Advanced Departments of the South Carolina School for the Deaf for this study. Chronological ages ranged from eleven to twenty. There were fourteen girls and seven boys. Deafness in fifteen cases was congenital, five reported deafness acquired from disease at an early age, and in one case the cause of deafness was unknown. In each case the child's audiogram was the exclusive basis of

¹ In the case of each individual included in this study, vowel, consonant, and sentence discrimination tests were given. The results of this testing program may be secured from Miss Utley.

² For obvious reasons the trade-names of these hearing-aid manufacturers will be referred to by alphabetical symbols. The writers would be glad to supply the trade-names to interested inquirers.

selection.³ It should be understood that acoustic training in this school, at the time the investigation was made, was not prescribed on the basis of the audiogram alone. For the present study, however, it seemed the only concrete method on which to base the experimentation. Various amounts of residual hearing were considered. Present fluency of speech, age of onset of deafness, school achievement, native intelligence, social and economic status of family, and number of years in school were in no case contributing factors of selection.

III. METHOD OF TESTING

As a step preliminary to the technique used in this study the receiver of the audiometer was placed in direct contact with the microphone of the hearing-aid. This method of placing one on top of the other was tried in different situations—in a comparatively quiet room, in a sound-proof room, and imbedded in a container and surrounded by cotton. All variations of this method of testing were abandoned because:

- (1) when placed in the open, without any means of sound-proofing, the microphone picks up many extraneous sounds other than the intended pure tones of the audiometer; and
- (2) an audiometric test is made with the receiver against the human ear and its calibration, therefore, takes into account, and is modified by, the physical construction of the ear and the resultant acoustical characteristics. The microphone of the aid is not constructed in a similar manner. For various reasons, involving complex physical principles, the results are not comparable.

³ For further particulars see Utley, Jean, *An Investigation of Hearing and Deafness Among Pupils of the South Carolina School for the Deaf*, printed at the S. C. School for the Deaf, (May, 1941) pp. 20-21.

Finally, the procedure devised by Dr. Robert West, Professor of Speech Pathology, University of Wisconsin, was found to suit the problem best. The application of this method⁴ will be discussed briefly in order to clarify the following procedure. Illustrations of this procedure are shown in Table I.

Previously regular audiometric tests were made using a well-known make of pure tone audiometer and receiver accepted by the Council on Physical Therapy. Losses for both ears were recorded on each of seven frequencies. (See Table I, first half of Step I.) Considering the results of this test, the "better ear" reading for each frequency was selected because without the aid one hears with both ears at the same time. When wearing the aid, however, the amplification is directed to the ear to which the aid is attached. Hence, the person's ability to hear by the use of the aid is compared to what the two ears unaided can bring him. Usually, the "better ear" is the right or the left, seldom the composite ear. The checked readings ("better ear" recordings) are multiplied by respective factors in order to equalize the values of the various frequency components in English speech. Even though the use of the factorial quantities looks complicated, it is very simple. For example, a forty decibel loss at 128 is converted into percentage by taking 40/85 of 100%, since 85 db. loss is a total loss for that frequency. Thus, the first procedure in the complete computation of hearing loss would be to divide 45 by 85 and then multiply it by 100. After making similar computations for each of the frequencies, the percentages arrived at are added, and the total divided by seven. Since, however, Dr. West assumes that the three highest frequencies, 2048, 4096, and 8192, are

⁴ West, Robert, *The Testing of Hearing Aids*, (Madison, Wis., 1939).

more important in the perception of speech than are other frequencies, they are weighted more heavily. These three frequencies must be multiplied by appropriate weighting factors before making final additions. All this computation is simplified by combining the process of weighting with the multiplying

and dividing in setting up the constant factors.⁵

The audiometer was attached to a "straight line" amplifier, connected in turn to a loud-speaker. With this equip-

⁵ The authors are much indebted to advice and assistance rendered them on this point by Dr. West.

TABLE I

TABLE ILLUSTRATING STEPS INVOLVED IN COMPUTING PERCENTAGE OF LOSS FOR SPEECH GAINED BY AID
Name: D. G. Type of Aid: "Y" Date: Feb., 1942

Step I. Results of Pure Tone Audiometric Test

Frequencies Tested	Losses in Sensation Units		Weighting Factors	Percentage of Loss
	Right Ear	Left Ear		
128	25✓	40	× .110	2.750
256	35✓	40	× .090	3.150
512	40	40✓	× .080	3.200
1024	70	55✓	× .075	4.125
2048	60	55✓	× .150	8.250
4096	85	75✓	× .170	12.750
8192	70	65✓	× .210	13.650
Total Percentage of Loss				47.875

Step II.

	Without Aid	With Aid	Differences
128	10	5	- 5
256	10	- 5	-15
512	20	5	-15
1024	50	0	-50
2048	25	-10	-35
4096	25	- 5	-30
8192	50	70	+20

Step III.

	"Better Ear" Audiometer Ear-phone Reading (Carried forward from Step I)	Correction from "Differences" (Carried forward from Step II)	(Sensation units when wearing aid) Corrected Ratings
128	25	- 5	20
256	35	-15	20
512	40	-15	25
1024	55	-50	5
2048	55	-35	20
4096	75	-30	45
8192	65	+20	85

Step IV.

	Corrected Ratings (Carried forward from Step III)	Weighting Factors	Percentage
128	20	× .110	2.200
256	20	× .090	1.800
512	25	× .080	2.000
1024	5	× .075	.375
2048	20	× .150	3.000
4096	45	× .170	7.650
8192	85	× .210	17.850

Step V.

Total Percentage of Loss		47.875	
Percentage of Loss With Aid		34.875	
Percentage Gained by Aid		13.000	
		Percentage of Loss With Aid	34.875

ment frequencies at octave intervals from 128 to 8192, inclusive, were transmitted to the loud-speaker and then by air to the subject. The loud-speaker was placed directly in front of the face of the subject, about ten inches away. The amplifier was set at the greatest volume possible wherein distortion was not present. By use of the audiometer volume control each frequency was checked where the subject could barely hear the tone. With the setting of the controls on the amplifier, held constant, this procedure was repeated with the subject wearing the individual hearing-aid adjusted to his liking. The microphone of the aid was also about ten inches away from the loud-speaker. (See Table I, Step III.)

The difference between the readings obtained by use of the amplifier with and without the hearing-aid was noted and used to correct the original pure tone audiometric test. The correction was added to the original values algebraically, thus giving an estimate of the patient's hearing losses and gains in sensation units when wearing an aid. For example, as a result of the pure tone test, an individual showed a loss of 25 db. in the right ear, and 40 db. in the left ear. Twenty-five db. was the reading chosen as the "better ear" reading. When this frequency (128) was amplified, the individual heard it at 10 db. without the aid and 5 db. with the aid. This showed a difference, and in this case it was a gain, of 5 db. When the difference of 5 db. was added algebraically to the "better ear" reading of 25 db. it resulted in a corrected rating of 20 sensation units. (Table I, Step III.) To compute the percentage of hearing loss, the correction ratings were multiplied by the respective factors and totalled. (Table I, Step IV.) By comparing the percentage of loss without the aid, obtained earlier in the procedure, with the

percentage of loss with the aid, it was possible to determine if and how much the aid benefited the individual. (Table I, Step V.)

If an individual did not respond to a given frequency an assumed threshold value for that frequency was recorded in order that the total percentage of loss would be comparable to those of all other subjects. The threshold substituted was that of total loss.

IV. RESULTS

(Hereafter the different hearing-aids will be referred to as "W," "Y," and "Z." The letters refer to the make of the instrument, not the design. "Y" aids, for example, may be had in various types of design suited to the individual needs of those for whom they are intended and to whose ears they are especially fitted.)

Testing the "Y" Aid

All children in the study were tested using the "Y" aids. In each case the child was tested with the type of aid best suited to his hearing loss. Column I, Table II, shows the decibel loss on the pure tone test of seven different frequencies; Column II, decibel gain or loss comparing readings obtained with and without aid presented through amplifier and loud-speaker on each of the frequencies; Column III, total percentage of loss for speech without the aid; Column IV, total percentage of loss for speech with the aid; and Column V, gain resulting from use of aid. For example, S. A. has a 40 db. loss for the 128 frequency on the pure tone test. The gain showed by wearing the aid as against what was heard through air when the sound was presented through the amplifier and loud-speaker is 15 decibels. Other frequencies have been considered in like manner. The total percentage of loss for speech without the aid is 56, while the total percentage of loss for speech with the aid is 41, resulting in a total gain of 15% for the "Y" aid.

The italicized numbers (Table II) indicate thresholds of the audiometer on frequencies which were absent or uncertain on the individual audiograms. For example, on the audiometer used, the threshold of 1024 is 100 db., 4096-90 db., and 8192-70 db. These thresholds were supplied in order that an average

the individual was "hindered" to that degree by the aid.

Table II shows that the average percentage of loss for speech without the hearing-aid for this group is 60%; with the aid it was 46%; by subtracting percentage of loss with the "Y" aid from percentage of loss without the aid, the

TABLE II
SHOWING SIGNIFICANT DATA RELATIVE TO THE RESULTS OF TESTING THE "Y" Aid
(21 cases)

	128		256		512		1024		2048		4096		8192					
	I	II	I	II	I	II	I	II	I	II	I	II	I	II	III	IV	V	
S. A.	40	15	55	20	65	35	65	40	55	30	80	5	70	0	56	41	15	
B. B.	45	20	60	35	65	35	65	25	50	40	80	15	70	..	62	43	19	
G. B.	25	0	35	0	50	15	60	30	50	35	55	20	60	0	44	32	12	
J. C.	40	15	45	25	60	30	95	40	80	50	85	5	70	..	67	49	18	
P. P. C.	20	0	15	0	25	10	60	30	70	40	65	15	65	10	45	32	13	
P. C.	55	10	65	20	75	15	75	20	60	35	65	5	55	-25	55	49	6	
V. G.	50	25	50	20	50	35	75	55	90	65	85	-35	70	..	68	52	16	
D. G.	25	5	35	15	40	15	55	50	55	35	75	30	65	20	48	26	21	
E. G.	35	15	40	15	45	25	75	40	55	35	75	20	70	-25	52	41	11	
A. G.	35	5	40	25	60	45	75	45	65	40	75	30	60	-40	53	40	13	
G. H.	45	25	50	10	55	30	55	25	40	25	60	5	60	-20	47	38	9	
C. A. H.	50	25	65	40	80	50	90	50	85	40	90	-30	70	0	67	52	15	
C. H.	55	10	70	10	75	20	100	10	100	-15	90	10	70	5	71	66	5	
B. McC.	55	15	65	30	75	40	80	40	80	50	90	..	70	..	76	58	18	
N. M.	45	15	45	15	55	20	60	35	55	40	70	25	60	-10	51	35	16	
L. R.	35	15	45	25	55	35	60	45	55	35	60	10	50	0	46	29	17	
C. S.	60	20	65	20	80	35	85	40	75	55	90	..	70	..	76	58	18	
O. W. S.	40	5	50	5	65	25	90	45	95	45	90	-25	70	..	70	62	8	
S. T.	60	10	55	25	70	35	85	35	80	5	90	5	70	0	66	55	11	
E. T.	50	30	50	35	60	35	85	60	100	10	90	-10	70	..	71	59	12	
E. W.	45	15	50	25	60	45	85	40	95	10	90	5	70	..	70	57	13	
Av.	43	14	50	20	60	30	75	38	71	33	79-	5	66-	..	60	46	14	

- I. Db. Loss - Pure Tone Test
 II. Db. gain or loss (-) through amplifier
 III. Total Percentage of Loss for speech without aid
 IV. Total Percentage of Loss for speech with aid
 V. Total Gain with "Y" aid

might be calculated where necessary. It was impossible to record a gain or loss, obtained by comparing the individuals' responses first through the amplifier without the aid, then through the amplifier with the aid; in many instances some children did not respond to that frequency even though it was amplified. In other cases, probably the aid proved to be the factor which caused the frequency to be damped, and was thus recorded as a minus quantity. In other words, a negative number means that

"Y" aid is found to benefit the group of twenty-one children with an average of 14%.

Testing the "W" Aid

From the twenty-one children who had been selected originally, ten children with various types of audiograms were chosen at random to wear the "W" aids. These were specifically fitted to these children. One child in the Primary Department was selected merely as an experiment, but for obvious reasons was

not included in the present study which is comprised of older children. Another aid was fitted to a child in the Advanced Department who left school before the completion of the testing. Therefore, he, too, was excluded from the summary.

fit the group of eight cases with an average of 7%.

The "Y" aid shows more gain in decibels than the "W" aid when the tone is amplified on each frequency where a calculation can be made. The "Y" aid

TABLE III
SHOWING SIGNIFICANT DATA RELATIVE TO THE RESULTS OF TESTING THE "W" AID
(8 cases)

	128		256		512		1024		2048		4096		8192				
	I	II	I	II	I	II	I	II	I	II	I	II	I	II	III	IV	V
G. B.	25	-5	35	0	50	5	60	15	50	35	55	20	60	-10	44	36	8
V. G.	50	0	50	0	50	20	75	45	90	45	85	-35	70	..	68	61	7
E. G.	35	15	40	5	45	25	75	35	55	30	75	0	70	-15	52	43	9
A. G.	35	-5	40	5	60	10	75	25	65	20	75	5	60	-20	53	51	2
B. McC.	55	5	65	20	75	30	80	30	80	40	90	..	70	..	76	63	13
N. M.	45	10	45	-5	55	5	60	25	55	30	70	20	60	-10	51	42	9
L. R.	35	0	45	0	55	0	60	15	55	15	60	-10	50	0	46	44	2
C. S.	60	15	65	10	80	25	85	35	75	20	90	..	70	..	76	66	10
Av.	43	4	48	4	59	15	71	28	66	29	75	..	64	..	58	51	7

- I. Db. Loss — Pure Tone Test
 II. Db. gain or loss (-) through amplifier
 III. Total Percentage of Loss for speech without aid
 IV. Total Percentage of Loss for speech with aid
 V. Total Gain with "W" aid

The eight remaining have formed the second part of this investigation.

Data concerning the "W" aid presented in Table III is assembled in the same manner as Table II. The greatest gains found by the "W" aid appear among the frequencies 512, 1024, and 2048. This table shows that the average percentage of loss for speech without the aid for this group is 58%, with the aid, 51%, and the "W" aid is found to bene-

fits the group 10 db. more on 128, 15 db. on 256, 16 db. on 512, 13 db. on 1024, and 15 db. on 2048. An appreciable gain is shown by the "Y" aid over the "W" aid, within the speech range.

Fifty-eight per cent is considered to be the average percentage of loss for speech without any aid for the group. The "W" aid benefits the group by reducing that percentage to 51%. The "W" aid benefits the group 7%. The "Y" aid reduces

TABLE IV
SHOWING COMPARATIVE RESULTS OF TESTING EIGHT CHILDREN WEARING "W" AND "Y" AIDS

Frequencies	Average Decibel Loss Pure Tone Test	Decibel Gain or Loss Through Amplifier	
		"W" Aid	"Y" Aid
128	43	4	14
256	48	4	19
512	59	15	31
1024	71	28	41
2048	66	29	44
4096	75	(These could not be calculated.)	
8192	64	(These could not be calculated.)	
Average (Total)		Percentage Loss for Speech Without Aid—58	
Average (Total)		Percentage Loss for Speech With "W" Aid—51	
Average (Total)		Percentage Loss for Speech With "Y" Aid—43	
Average (Total)		Percentage Gain for Speech With "W" Aid—7	
Average (Total)		Percentage Gain for Speech With "Y" Aid—15	

the 58% loss for speech without the aid to 43%, or a benefit of 15%. Thus, from these statistics it appears that the "Y" aid is much more beneficial to the group than the "W" aid. In fact, the "Y" aid benefits these individuals from a minimum of 2% more in one case to a maximum of 15% more in another. While

a correction has been applied. It will be recalled that the results of the standard audiometric tests are available in this study. Of prime interest here is the difference between thresholds when the child is wearing the aid and when he is not. The improvement caused by wearing the aid is plotted above the standard

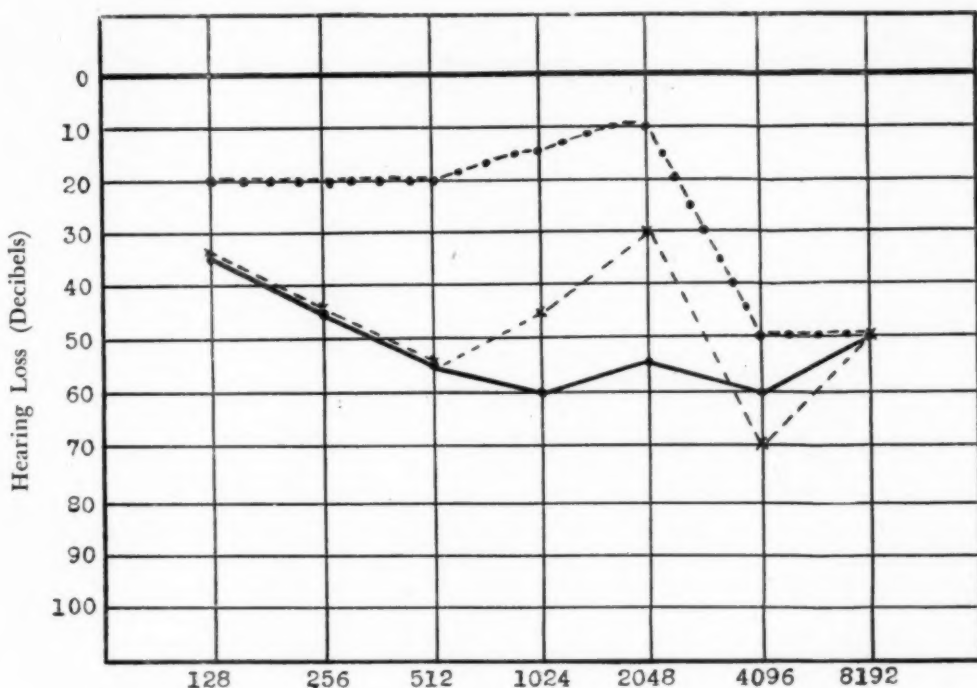


FIG. 1—Graph showing results of tests for L. R. Solid line shows "better ear" pure tone test readings; broken line, corrected readings for "W" aid; dot-dash line corrected readings for "Y" aid.

in the present study the "Y" aid was somewhat superior, it must be remembered that with some subjects it was only slightly better than the "W" aid.

Specific Case Studies

In order to illustrate and clarify the use of this procedure among children wearing individual aids, Figures 1 and 2 are presented. These cases, however, are included in the previous analyses.

For simplicity in presentation of data,

audiometric "better ear" test readings by a number of sensation units equal to the distance between the amplified tone test and the test results brought about when wearing an aid.

L. R. was tested on both "W" and "Y" aids. The solid line shows the "better ear" readings of the pure tone test. The dotted line shows the corrected readings for the "W" aid, and the same is shown for the "Y" aid by the dot-dash line. The "Y" aid apparently improves thres-

holds considerably throughout the speech range, yet only slightly on the 4096 frequency. The gain found by the "W" aid is almost 2%, while the "Y" aid benefits 17%. (See Figure 1.)

C. H. was tested on the "Z" and "Y" aids. First of all, it is interesting to note that when 1024, 4096, and 8192 were am-

This frequency, however, is without doubt a most important frequency, and because of this "drop" the percentage gained by wearing this aid is very small -5%. The "Z" aid gives a "minus" 5%, thus proving that it is of no value to the child except, perhaps, psychologically. As far as hearing normal speech patterns

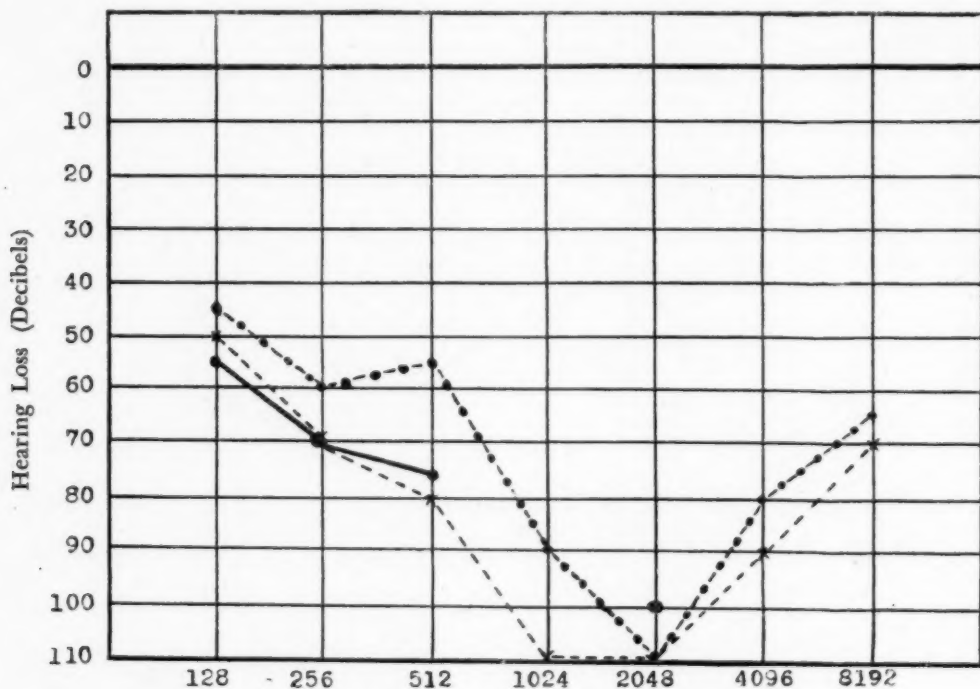


FIG. 2—Graph showing results of tests for C. H. Solid line shows "better ear" pure tone test readings; broken line, corrected readings for "Z" aid; dot-dash, corrected readings for "Y" aid.

plified and presented through the loud-speaker, thresholds were reached which, during the standard audiometric test, were not heard. This proves that hearing is present, but that the audiometer was not able to reach the thresholds. The "Z" aid benefits the individual only slightly on one frequency—128. On all except one of the remaining frequencies the "Z" aid in this case seems to be of no benefit. The "Y" aid is slightly preferable to the other aid except on 2048.

is concerned, this aid would be worse than none at all. The individual apparently "hears" sound better without that particular aid. (See Figure 2.)

V. OBSERVATIONS

From the present study it is obvious that a child, commonly known as deaf, can be properly fitted with the hearing-aid most beneficial to his type of hearing loss, and thus be more adequately prepared to compete with normal hearing

individuals when he leaves the school for the deaf.⁶

VI. CONCLUSIONS

The present study was an investigation of individually fitted hearing-aids on the threshold acuity of twenty-one students in a school for the deaf. The method used to determine the amount of benefit derived from various aids was to present through a loud-speaker the amplified tone from a standard audiometer. Some clue to the relative efficiency of different makes of hearing-aids was

⁶ During the course of this investigation it was gratifying to see the psychological as well as physical change that came over these children, especially the "deafest" ones. They realized for themselves that they had "usable" hearing. Their whole outlook on life was changed. The change in their speech and quality of voice was noted from the comparison of the September, 1941, phonographic recordings with their speech in May, 1942. It was more spontaneous, and their language was more natural. They were anxious to go to social gatherings such as movies, dances, assemblies, First Aid classes, recitals, and the like if they could "wear the hearing-aid," as they phrased it. These were but a few of the changes that were noticed by the people outside of the school as well as those within it. Unless these children had been properly fitted with hearing-aids their hearing would have deteriorated, or at the best, remained "dormant." Naturally, in the cases of the children with the most severe hearing losses the cultivation of awareness to sound and its meaning was a slower process. Any residual hearing, however, whether its thresholds are reached by the audiometer or not, is usable.

gained by testing several of these children on more than one aid.

From the data, the following conclusions may be drawn:

1. The "Y" aid benefits most of the individuals in this study at 1024. At 512 and 2048 the benefit is believed to be significant. The frequency 4096 is least benefited by the "Y" aid, aside from 8192 where no gain is recorded for this group. The "Y" aid shows greatest benefit for those frequencies within the speech range. Finally, the "Y" aid, in twenty-one cases benefits the group with an average of 14%.

2. In the eight cases tested with the "W" aid, this aid benefits the children most at 1024 and 2048. The average benefit for the group is 7%.

3. In the eight cases tested using both the "W" and "Y" aids, the "Y" shows an appreciable gain over the "W" aid within the speech range. In the case of each frequency, disregarding 8192, the group is benefited more by the "Y" aid. The latter benefits the individuals from 2% to 15% over the "W" aid.

4. In some cases thresholds which were not reached with the standard audiometer were reached when the tones were amplified and presented through the loud-speaker.

5. The "Z" aid is of no practicable benefit.

A COMPARATIVE STUDY OF THE PITCH AND DURATION CHARACTERISTICS OF IMPROMPTU SPEAKING AND ORAL READING*

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RECENT investigations by Pronovost,¹ and McIntosh² have described objectively the pitch and duration characteristics of the oral reading performances of six carefully selected superior male speakers. The purpose of the present investigation is to study, under like experimental conditions, impromptu speeches and subsequent oral readings of these speeches by the same subjects.

I. EXPERIMENTAL PROCEDURE

The subjects used in this investigation were the same as those previously selected for the research studies mentioned above. They were chosen from a group of twenty-five superior male speakers, recommended by the staff of the Department of Speech at the State University of Iowa for their superior voice usage.

Rigid tests of speaking and reading eliminated from consideration all who presented deviations in articulation or phonation in either type of performance. For the eight subjects surviving this preliminary test, phonograph recordings were made by each subject of four read-

ings of a carefully composed prose passage. The recordings were made in a sound-proofed room and the subjects were instructed to read as if to an audience of twenty-five people. The best recording for each subject was selected by seven trained observers. Twelve trained observers then ranked these eight recordings by the method of paired comparisons in which each reading was compared to each other reading twice, once preceding and once following. The pairs were presented in random order. On the basis of these judgments, the two lowest ranking speakers of this group were eliminated, leaving six subjects for the studies. All judgments were based upon the general effectiveness of the performances. Excepting the original careful selective process, validations were made on the basis of the oral reading performance.

For the purposes of the present study, a strictly impromptu speaking situation was arranged in the following manner. Each of the six subjects was given the topic "My Future Job," and allowed one minute to prepare a talk which in turn was to be delivered in approximately one minute. The subject was taken into a sound-proof room and asked to *speak* as if to an audience of twenty-five people. The entire speaking performance was recorded with high-quality recording equipment.

One week later the subjects were called back into the same experimental situation to record a reading performance directly comparable to the impromptu speaking performance. Each subject was

* A portion of a dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy in the Department of Speech, in the Graduate College of the State University of Iowa, August, 1940. It is a part of a research program in Experimental Phonetics being carried out under the direction of Professor Grant Fairbanks.

¹ Pronovost, W., "An Experimental Study of the Habitual and Natural Pitch Levels of Superior Speakers," Ph. D. Dissertation, State University of Iowa, 1939.

² McIntosh, C. W., Jr., "A Study of the Relationship Between Pitch Level and Pitch Variability in the Voices of Superior Speakers," Ph.D. Dissertation, State University of Iowa, 1939.

given a typewritten copy of his original speech, which had been previously transcribed and punctuated in a simple fashion, and allowed one minute in which to prepare himself to read it. He was then instructed to *read* as if to an audience of twenty-five people, and the performance was recorded.

Chiefly because of the time involved in dealing with frequency measurements, it was necessary to sample the central portions of each of the performances. Only relatively complete thought units were used. The speech of Subject C, with the sampled portions in italics, is presented below, to indicate the general nature of the performances and the sampling procedure.

One of the most important things with which all of us have to contend, of course, is preparation for the future job which each one of us will hold when we get out of the university. In my own case the particular preparation which I am to make, and which I think everyone of us could make in preparation for a future job, is, first of all, very careful preparation in the ability to meet people. *And that, of course, comes through practice in meeting people. The second thing, I think, which is most important in preparation for a future job is that each one of us must become acquainted with the fundamentals upon which the business organization of this country works. That, of course, involves taking political science and economics, and studying very carefully the principles upon which our business organization is based.* The third principal thing which is important in preparing for a future job, in my case as well as in the case of each one of you is taking care to create a liking between yourself and the people with whom you associate.

In duration, samples of the speaking performance ranged from 23.31 to 26.88 seconds, and those of the reading performance from 17.35 to 24.19 seconds. Approximately 24,000 individual sound waves were considered in this study.

The phonophotographic technique originated by Metfessel³, modified by Simon⁴, and Lewis and Tiffin⁵ and electrified by Cowan⁶ was used. The use of this technique gives a photographic record of fundamental sound wave frequencies from phonograph records. In the present study, the average period length for consecutive intervals of 0.038 seconds each was measured. The over all error with this method of measurement is negligible, being of the order of 0.5 per cent, or 0.04 of a tone.

Frequency conversions were made from period-length measurements, graphic pitch scores plotted, and various computations and means of analysis applied to the data, following procedures outlined by Fairbanks.⁷

TABLE I
GROUP MEASURES OF CENTRAL TENDENCY AND
VARIABILITY OF PITCH

	Speaking	Reading	Differences
Median Pitch			
Level (c.p.s.)	120	129	
Median Pitch			
Level*	17.30	18.00	.70
Mean Pitch			
Level (c.p.s.)	120	132	
Mean Pitch			
Level*	17.30	18.19	.89
Mean S. D.			
(tones)	1.32	1.65	
Mean Total Pitch			
Range (tones)	8.42	9.89	1.47

*Tones above 16.35 cycles per second.

II. RESULTS

1. *Pitch Level.* Table I presents data on group measures of central tendency

³ Metfessel, M., "Techniques for the Objective Study of Vocal Art," *Psychol. Monog.*, XXXVI, (1927), 1-40.

⁴ Simon, C. T., "The Variability of Consecutive Wave Lengths in Vocal and Instrumental Sounds," *Psychol. Monog.*, XXXVI, (1927), 41-83.

⁵ Lewis, D. and Tiffin, J., "A Psychophysical Study of Individual Differences in Speaking Ability," *Ar. Sp.*, I, (1934), 13-60.

⁶ Cowan, M., "Pitch and Intensity Characteristics of Stage Speech," *Ar. Sp.*, I, Suppl., (1936).

⁷ Fairbanks, G., "Recent Experimental Investigations of Vocal Pitch in Speech," *J.A.S.A.*, XI, (1940), 457-466.

and variability for the two performances studied. Measures of central tendency are stated in the first four items of Table I. It will be seen that the median pitch level for impromptu speaking is 17.30 tones, and that for reading, 18.00 tones above the zero reference frequency⁸, a difference of 0.70 tones in favor of the reading performance.

Although reading has a median pitch level only 0.70 tones higher than that for impromptu speaking, this increase of a small order represents approximately the same difference as that found by McIntosh⁹ between the median pitch levels of normal readings and readings at a slightly higher pitch level. His study indicated that flexibility increased as pitch level was raised. Further measures in the present study will indicate that impromptu speaking is less flexible in pitch than the readings of the speech. However, it should not be presumed that this slight increase in pitch level is the sole factor contributing to the additional pitch flexibility of the reading performance. The mean pitch levels are seen to be quite similar to the median pitch levels.

2. *Pitch Variability.* The mean standard deviation in tones is presented as the fifth item in Table I. The *mean* standard deviation of the individual distributions is used in this case rather than the standard deviation of the composite distribution, in order to avoid the leveling effect from combining distributions that have different central tendencies. Impromptu speaking with an S.D. of 1.32 tones is seen to be less variable than oral reading of the speech with an S.D. of 1.65 tones. Standard deviations for the individual distributions were in all cases greater for read-

ing than for speaking. The standard deviation as a measure of pitch variability, or flexibility, has been validated by McIntosh¹⁰, who found that in each case this measure was larger for normal readings and readings more flexible by instruction, than for readings which were less flexible by instruction.

In Table II will be seen the mean

TABLE II
EXTENT IN TONES OF MEDIAN PERCENTAGES OF
PITCHES USED * FOR IMPROMPTU SPEAKING
AND READING

Median Percentages of Pitches	Speaking	Reading	Increase of Reading over Speaking
10	.32	.39	.07
20	.62	.78	.16
30	1.03	1.21	.18
40	1.45	1.63	.18
50	1.79	2.15	.36
60	2.17	2.71	.54
70	2.66	3.35	.69
80	3.23	4.04	.81
90	4.02	5.19	1.17
100**	8.42	9.89	1.47

* Distributed equally above and below the median.

** Equivalent to total pitch range.

values for the extent in tones of median percentages of the pitches used. The computation of these values may be explained as follows: Each individual distribution of pitches was considered, and the median 10 per cent, 20 per cent, etc., of the cases computed up to and including the median 100 per cent, which last measure is equivalent to the total pitch range, or the distance in tones between the lowest and the highest pitches used. The median 10 per cent may be considered as the range between the 45th and the 55th percentiles, the median 20 per cent as the range between the 40th and the 60th percentiles, etc. The value of this computation will be noted when it is observed that the median 90 per cent of the cases in reading is subtended by only 5.19 tones, whereas the total range is 9.89 tones, an increase of 4.70 tones, when only 10 per cent more

⁸ The zero reference frequency proposed by Fletcher, Harvey, "Loudness, Pitch and Timbre of Musical Tones," *J.A.S.A.*, VI, (1934) 59-69.

⁹ McIntosh, C. W., Jr., *op. cit.*

¹⁰ McIntosh, C. W., Jr., *op. cit.*

of the extremely high and low pitches are added to the distributions.

It will be noted, however, that the mean total pitch ranges, or 100 per cent measures, for impromptu speaking of 8.42 tones and for reading of 9.89 tones are greater than those reported by Murray and Tiffin¹¹, who found pitch ranges of 2.5, 4.5, and 6.3 tones for poor, good and trained speakers, respectively. Lynch¹² reports pitch ranges of 5.8 and 8.2 tones for untrained and trained speakers. Lewis and Tiffin¹³ report pitch ranges from 3.8 to 9.9 tones. Their highest value of 9.9 tones is about the same as that for the average total range for reading in this study, but much lower than the pitch range of 14.18 tones found for the reading performance of one subject in this study. If a few intermittently occurring frequencies, of the order of less than approximately 45 c.p.s. had been included, the pitch range of this speaker would have been even more extreme.

From Table II it will be noted that reading is more variable than impromptu speaking at all percentages. The greatest difference between the two performances will be seen in the median 90 and 100 per cent measures, in which there is a difference of 1.17 and 1.47 tones, respectively.

¹¹ Murray, E., and Tiffin, J., "An Analysis of Some Basic Aspects of Effective Speech," *Ar. Sp.*, I (1934), 41-83.

¹² Lynch, G. E., "A Phonophotographic Study of Trained and Untrained Voices Reading Factual and Emotional Material," *Ar. Sp.*, I (1934), 13-60.

¹³ Lewis, D., and Tiffin, J., *op. cit.*

For both of the measures of pitch variability discussed above, impromptu speaking is less variable than oral reading of the same material. Without exception, the values for both speaking and reading are less than those reported by McIntosh¹⁴ for a normal reading of a well-composed prose passage by these same subjects.

The nature of the performances and the type of material used must be considered when interpreting these differences in pitch variability. In the first place, impromptu speaking is not the type of performance in which to expect the same sureness of approach usually anticipated in the oral delivery of well written material. This probable lack of sureness may be reflected in the relatively mediocre composition of the speeches. Secondly, because these speeches were read almost word for word as they had been spoken, it seems unreasonable to assume that even the best oral readers have the ability to surmount the limitations imposed by the weaknesses of the original performances.

3. Mean Extent of Phonations, Inflections and Shifts.

Pitch curves of the two performances illustrated: (1) marked similarities in the general pattern of the two performances; (2) measurable differences in pitch variability; and (3) an increase in duration during impromptu speaking.

Table III lists the mean extents of

¹⁴ McIntosh, C. W., Jr., *op. cit.*

TABLE III. MEAN EXTENTS OF PHONATIONS, INFLECTIONS AND SHIFTS IN TONES

	Speaking 2.34	Reading 2.50	Differences .16
Mean Extent of Phonations			
Mean Extent of Inflections			
Upward Inflections	1.67	1.92	.25
Downward Inflections	1.60	1.82	.22
All Inflections	1.63	1.86	.23
Mean Extent of Shifts			
Upward Shifts	2.03	2.15	.12
Downward Shifts	1.84	1.68	-.16
All Shifts	1.96	1.98	.02

phonations, inflections, and shifts.¹⁵ The mean extent of phonations in speaking is seen to be 2.34 tones, or 0.16 tones less than the value of 2.50 tones in reading. Consistent with previous trends, the mean extents of inflections are less in the case of the speaking performance for upward, downward, and all inflections. When the mean extents of downward and upward inflections are compared, the latter are slightly greater in extent in both performances. This is the reverse of trends previously reported elsewhere, and some speculation may be in order. It has been quite commonly stated that rising inflections indicate an "incompleteness" or "lack of sureness" in vocal performance. In this case it may be that impromptu speaking tends to be an "unsure" performance, and reading of the speech invites a use of similar upward inflections that are greater in extent than downward inflections. In keeping with the above findings, the mean extent of upward shifts and of all shifts in reading are seen to exceed those in speaking. The mean extent of downward shifts, however, is greater in speaking than in reading. When upward shifts are compared to downward shifts for both performances, it is seen that upward shifts are greater in mean extent. When the extent of all inflections and all shifts are compared, the shifts are seen to exceed the inflections in mean extent by one-third of a tone. This last

finding is in opposition to previous reports which have indicated that inflections exceed shifts in mean extent.

With the exception of downward shifts, these measures of phonations, inflections, and shifts are greater in reading than in speaking. Shifts exceed inflections in mean extent.

4. *Rate of Pitch Change and Number of Pitch Changes.*¹⁶ The first four items in Table IV represent the composite rate of pitch change for the two performances.

It will be observed in Table IV that reading exceeds speaking in mean rate of pitch change, in tones per second, for the entire passage, and, during all inflections, downward inflections and upward inflections. This difference is relatively large, the actual percentage of increase exceeding twenty-five in all cases. It appears that impromptu speaking and oral reading of the speeches are clearly differentiated on the basis of differences in the mean rate of pitch change between the two performances.

Table IV also lists data for the mean number of changes in direction of pitch per second. Inspection of the lower part of this table indicates that changes in direction are more frequent in reading than in speaking, with the exception of those changes of less than a semi-tone. In these latter measures the changes are more frequent in speaking than in reading. McIntosh¹⁷ found that there were more changes in the direction of pitch for the more flexible performances, and in general this trend is supported here.

5. *Rate.* In Table V, which presents composite measures of time for both performances, it will be seen that the impromptu speaking performances were delivered at a mean rate of 151 words per minute, whereas, the mean rate of

¹⁵ Fairbanks, G., *op. cit.*, p. 458, "... an inflection is defined as a frequency modulation, whether upward or downward, without interruption of phonation, while the term shift refers to a change in pitch which takes place between the terminal pitch of a given phonation and the initial pitch of the subsequent phonation. The rate of pitch change is a measure of the rapidity with which frequency is modulated per unit of time during inflections, i.e., the relative "steepness" of the inflections. For any inflection this is determined by dividing its extent in tones by its duration in seconds. A change in direction of pitch movement is a shift in frequency modulation from an upward direction to a downward direction, or vice versa."

¹⁶ Fairbanks, G., *ibid.*

¹⁷ McIntosh, C. W., Jr., *op. cit.*

the reading performances was 183 words per minute. This difference is seen to be a striking one when these rates are compared to Darley¹⁸ norms established for a random sample of college freshmen reading factual material aloud. The speaking performance lies between the 10th and 15th percentiles and the reading of the speech between the 80th and 85th percentiles for his subjects. Obviously, however, any comparisons made

same as that for the passage studied by Darley.

The second row of Table V shows that total phonated time represents a relatively constant fraction of the total performance time for both performances, in spite of the marked differences in rate. This is possible because both pauses and phonations are seen to consume more time in the impromptu speech than in the reading of the speech.

TABLE IV. MEASURES OF RATE OF PITCH CHANGE AND NUMBER OF CHANGES FOR IMPROMPTU SPEAKING AND READING

	Speaking	Reading	Differences
Mean Rate of Pitch Change *	8.02	10.86	2.84
Mean Rate of Pitch Change During Inflections			
All Inflections	13.40	16.88	3.48
Downward Inflections	12.58	15.74	3.16
Upward Inflections	14.61	18.51	3.90
Mean Number of Changes in Direction of Pitch per Second:			
During Phonation only			
All Extents	7.00	7.05	.05
Semi-tone or Greater	4.20	4.65	.45
Less than a Semi-tone	2.80	2.41	-.39
Including Shifts			
All Extents	6.25	7.03	.78
Semi-tone or Greater	4.00	5.18	1.18
Less than a Semi-tone	2.25	1.85	-.40

* Tones per second.

with these norms would appear to be valid only for the *reading* of the speech. Because there are no norms for rate in impromptu speaking, it is impossible to say at what percentile for this type of performance this value falls. In considering the individuals, all of the subjects showed a more rapid rate in reading with the exception of one subject who read and spoke with exactly equal rates. The length of words in these performances is approximately the

Because of the general increase in rate in the reading performance, it might be predicted that the mean duration of pauses would decrease relatively more than the mean duration of phonations. Inspection of Table V indicates that such an assumption is true, as the percentage of decrease for the duration of phonations is seen to be eight, whereas that for the duration of pauses is 20 per cent.

III. SUMMARY

Phonograph recordings were made of six superior speakers delivering one min-

¹⁸ Darley, F. L., "A Normative Study of Oral Reading Rate," M.A. Thesis, State University of Iowa, 1940.

TABLE V. COMPOSITE MEASURES OF TIME FOR IMPROMPTU SPEAKING AND ORAL READING

	Speaking	Reading	Diff.	% of Increase or Decrease
Composite Rate (words per min.)	151	183	32	21
Mean Ratio of Phonated Time to Total Time	.66	.68	.03	5
Mean Duration of Phonations (sec.)	.38	.35	-.03	-8
Mean Duration of Pauses (sec.)	.20	.16	-.04	-20

ute impromptu speeches. One week later the subjects returned to the laboratory and a second set of recordings was made as each subject read aloud a copy of his speech. Phonophotographic techniques were utilized to obtain records of the pitch and time characteristics of these performances. The application of various measures provided descriptions which contributed to the following general conclusions.

1. The readings of the speeches were slightly higher in pitch level than the impromptu speeches, with the exception of the performances of one subject, whose pitch level was identical in both performances.

2. Reading was found to exceed impromptu speaking in pitch variability in all computations.

3. With the exception of downward

shifts, phonations, inflections, and shifts were greater in mean extent in reading than in speaking.

4. Reading exceeded speaking in mean rate of pitch change, and in the number of changes in the direction of pitch per second, with the exception that the mean number of changes in pitch was greater in speaking, when changes of less than a semi-tone were considered and pitch shifts included.

5. Reading, with a rate of 183 words per minute, was notably more rapid than speaking, which had a rate of 151 words per minute.

6. The proportion of phonated time to total time was almost identical in both performances. However, there were more phonations and pauses of longer mean duration in speaking than in reading.

WILLIAM E. BORAH'S SENATE SPEECHES ON THE LEAGUE OF NATIONS, 1918-1920 *

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POPULAR evaluations as well as the comments of competent critics have lauded William E. Borah for his forceful political oratory and his effective congressional debating. One of the most dramatic controversies of his long career occurred immediately after the first World War when the Senate considered whether the United States should participate in the League of Nations. The importance of this controversy and the recognition which Borah received for

his leadership of the Irreconcilables seem to justify the present study.

The study is limited to an analysis and evaluation of the invention which Borah employed in his Senate speeches. More specifically it encompasses a consideration of the orator's speech training, his methods of preparation, the sources and nature of his premises, his forms of support including ethical, emotional, and logical appeals, and his endeavors to adapt his oral argument to his audiences and the occasions.

THE SPEAKER'S BACKGROUND

Long before December 1918, Borah commenced his preparation for the League controversy. Many of his basic

* From a dissertation, "A Rhetorical Criticism of Invention of William E. Borah's Senate Speeches on the League of Nations, 1918-1920," directed by Professor A. Craig Baird and submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy at the State University of Iowa, 1942.

religious, political, and social tenets were first nurtured by his parents, the local Cumberland Presbyterian Church, and the neighborhood country school. His secondary education was limited to a year at Southern Illinois Academy, a term at the Lyons, Kansas, public school, and less than two semesters in the sub-freshman class of the University of Kansas. To the last institution mentioned he returned for part of a year of college. During these difficult years he developed an insatiable hunger for literature, history, government, and law.

What are the facts concerning Borah's formal training in speaking? To the writer's knowledge the Idahoan had only one course in elocution, which met fortnightly.¹ Nevertheless he early showed an active interest in speaking. When he was asked about his first speech, he replied facetiously that his "maiden speech" was made to a mule between two rows of corn in a southern Illinois field.² A *McGuffey* reader probably provided him with some excellent models, namely the speeches of Daniel Webster, Patrick Henry, Wendell Phillips, Henry Ward Beecher, and William Wirt.

The "debates of the common school," the literary society of Southern Illinois Academy, the Young People's Band of the Lyons, Kansas, Presbyterian Church, the Rice County Rural Teachers' Association, and the Orophilian Literary Society of the University of Kansas, in the order named, gave him many opportunities to practice and perfect his speaking technique.³

¹ The *Register* of the University of Kansas for 1885, p. 216, deposited in the office of the Registrar. *The Twenty-first Annual Catalogue of the Officers and Students of the University of Kansas* (Topeka, 1887), p. 64.

² Borah to G. Douglas Wardrop, Nov. 3, 1914, unpublished "Borah Papers," deposited in the Library of Congress.

³ Borah to G. Douglas Wardrop, Nov. 3, 1914; letter from Mrs. Nettie Gowdy Montgomery to the author (Sept. 28, 1940); Johnson, *Borah of Idaho*, pp. 12, 13; *The Lyons* (Kansas) *Republi-*

The termination of his formal training did not deter the Idahoan from further study. Under the supervision of a brother-in-law he soon passed the easy bar requirements of Kansas.⁴ Continuing to pursue many of the reading preferences which he had developed in school, he read widely in the works of Shakespeare, Swift, Hawthorne, Balzac, Dickens, Thackeray, Milton, Dante, and Emerson.⁵ Daily throughout his life he read the *Bible*.⁶ He took a special interest in constitutional history and the founding of the federal government. His speeches show that he was familiar with the techniques and thoughts of Burke, Fox, Webster, Lincoln, and many other British and American speakers of the past.⁷

Perhaps significant is the fact that Borah's training did not embrace any travel or study abroad. The first forty years of his life were spent in the Central West and Mountain states where the engrossing problems concerned the improvement and the settlement of those vast areas. The influence of regionalism may have been a factor in the evolution of his attitudes toward international affairs.

During his career the Idahoan frequently spoke to diverse audiences. In

can (March 13, 1884), p. 5; (April 2, 1885), p. 5; (Sept. 3, 1885), p. 5; (July 17, 1884), p. 5; (July 24, 1884), p. 5; (Oct. 9, 1884), p. 5; (Jan. 8, 1885), p. 4; *The Weekly* (Kansas) *University Courier* (Oct. 18, 1885), p. 1; (Nov. 13, 1885), p. 1.

⁴ *The Lyons Republican* (Sept. 29, 1887), p. 10.

⁵ Woolf, S. J., "Borah Looks to Emerson As a Guide," *The New York Times* (Nov. 13, 1927), Sec. V, p. 3.

⁶ Borah to H. W. Thompson (June 15, 1918), "Borah Papers."

⁷ Hard, William, "Borah the Individual," *Review of Reviews*, LXXI (Feb., 1925), 150.

Hard, William, "How Gladiators Reed, Walsh, and Borah Slew Mr. Warren," *The Washington* (D.C.) *Times* (Mar. 21, 1925), p. 3.

Borah, William E., "Lincoln the Orator," *American Problems*, ed. Horace Green (New York, 1924), p. 36.

Idaho he built up a successful law practice and gained a reputation as a shrewd and resourceful court room attorney. For over fifteen years he was active in state politics and campaigned throughout Idaho and sometimes neighboring states. His first two terms in the Senate gave him training in congressional debating and parliamentary manipulation. While the legislative aspirations of his first term were confined to national problems, those of his second six years were broadened to include foreign affairs. In the national political arena his campaigning and his addresses to political and patriotic gatherings attracted attention.

Borah's *invention* for the League controversy therefore commenced long before December, 1918. Much of the evidence to prove his contentions came from the reserves he had accumulated from reading and study. His skill as a speaker was the result of years of practice. His economic, social, and political philosophy had been compounded from his diverse experience. His reputation resulted from an energetic public life.

THE OCCASION

Wilson's advocacy of a league of nations and his decision to attend the Peace Conference immediately aroused a controversy in the Senate. Subsequently, for the greater part of three sessions⁸ that august body, vested with the power to ratify treaties, vigorously debated the advisability of participating in a world government.

Logically the controversy fell into four phases. The first, dating from the opening of the third session of the Sixty-Fifth Congress to February 15, 1919, occurred before the Paris Conference had formulated and published the proposed Covenant. The second extended to July 10,

1919, when Wilson formally submitted the Treaty to the Senate for ratification. During the third phase, which closed November 19, 1919, the Senate actually considered and defeated the Treaty. The fourth phase involved a reconsideration and second defeat of the Treaty, March 19, 1920.

A significant factor of Borah's *invention* for his oral argument was his endeavor to present his speeches at moments in the controversy when they would be most pertinent and when they would receive the maximum attention in the Senate and the press. Apparently he attempted to speak early in each phase of the controversy before his audience had become wearied by too much discussion. His address of December 6, 1918, one of the first senatorial criticisms of world union, was delivered shortly after the opening of the Senate controversy.⁹ On February 21, 1919, he was second only to Miles Poindexter in castigating the newly published League Covenant.¹⁰ His speeches of July 17 and July 25, 1919, were offered a few days after the President had presented the Treaty for ratification.¹¹ When it was resubmitted to the Senate, February 10, 1920, the Idahoan again was among the first to renew his attack.¹²

Many of Borah's speeches were delivered at dramatic times in the controversy. On June 5, he spoke shortly after his sensational revelation that the unpublished Treaty was in the hands of certain New York business interests.¹³ The decision of the Foreign Relations Committee to amend the Shantung clause stirred him to denounce the settlement in the Senate. His efforts of October 15, October 22, and November 10,

⁹ *Cong. Rec.*, Vol. 57, Pt. 1, pp. 189-197.

¹⁰ *Ibid.*, Vol. 57, Pt. 4, pp. 3911-3915.

¹¹ *Ibid.*, Vol. 58, Pt. 3, pp. 2730-2736, 2741-3145.

¹² *Ibid.*, Vol. 59, Pt. 3, pp. 2692-2698.

¹³ *Ibid.*, Vol. 58, Pt. 1, pp. 690-695.

⁸ 65th Congress, 3rd session, 66th Congress, 1st and 2nd sessions.

1919,¹⁴ came before important votes on amendments and reservations. An hour or so before the first defeat of the Treaty, November 19, 1919, he gave his "Little American" speech.¹⁵

Gilbert Hitchcock's announcement, February 20, 1920, that forty Democrats were willing to vote for a compromise on the troublesome reservation to Article X brought an impromptu speech from Borah.¹⁶ O March 3, 1920, when compromise seemed more imminent, he gave his last address of the controversy.¹⁷ On most of these occasions the importance of the pending decision assured him of intense interest and close attention from the senators and reading public.

The Idaho Senator further stimulated interest in his speeches by refuting significant statements issued by persons of prestige and importance, such as President Wilson, William H. Taft, Henry Wickersham, Dr. Lawrence Lowell, Herbert Hoover, and Dr. Charles Eliot. At times he planned his speeches as answers to the important activities of President Wilson and the League to Enforce Peace. Besides his fervent desire to denounce the arguments of his foes, the Idahoan must have realized that connecting his speeches with such events was an excellent method of getting wider consideration in the press.

THE AUDIENCE

Borah considered careful audience adjustment the essence of effective speaking. In a discussion of his speaking theory he stated that the orator "must depend in a very large measure upon the audience to determine what course he is to pursue. . . ." His audiences, he asserted, were sources of great inspira-

tion.¹⁸ Furthermore, he revealed that usually his decision to speak in the Senate was determined by "the turn" of debate.¹⁹

During this controversy his immediate and most important audience was, of course, the Senate of the United States, which, by a two-thirds vote, had the power to ratify the Treaty of Peace. Over the question of ratification, eventually the senators split into four factions: the Administration supporters, who favored outright and unqualified ratification; the Mild Reservationists, who sought slight modifications of the Treaty; the Strict Reservationists, who advocated material changes; and the Irreconcilables, the Borah group, who fought for outright rejection. The first three of these groups endorsed the League in one form or another. On the other hand, at the opening of the controversy only four senators openly pleaded for outright rejection;²⁰ by August 1919, four more had joined the revolt.²¹ The largest number ever openly affiliated with the Borah group was fourteen,²² and with one exception the Irreconcilables never won more than thirty-eight votes for any of their proposals.

Borah's secondary audience was the voters of the nation, the source whence came the pressure to make the wavering senators act. The Idahoan reached this popular audience through the newspapers and private correspondence, and by speaking tours during the spring.²³

¹⁸ Borah to Jean De Haven, August 4, 1937, quoted by Miss De Haven in "An Investigation of William E. Borah's Use of Argumentation in Congressional Debate," unpublished M.A. Thesis, University of South Dakota, 1939, p. 11.

¹⁹ Borah to Roderic I. O'Callaghan, July 19, 1922, "Borah Papers."

²⁰ Borah, Sherman, Poindexter, Frelinghuysen.

²¹ *The New York Times* (August 27, 1919), p. 1.

²² *Cong. Rec.*, Vol. 58, Pt. 9, pp. 8786-8803.

²³ Between March 6 and April 10 he spoke in the following cities: Boston, Mass.; Brooklyn,

¹⁴ *Ibid.*, Vol. 58, Pt. 7, pp. 6943-6947; pp. 7320-7325; Pt. 8, pp. 8201-8205.

¹⁵ *Ibid.*, Vol. 58, Pt. 9, pp. 8781-8784.

¹⁶ *Ibid.*, Vol. 59, Pt. 3, pp. 3180-3182.

¹⁷ *Ibid.*, Vol. 59, Pt. 4, pp. 3796-3803.

and fall of 1919²⁴ through the East and the Middle West.

In his speaking adjustment to the audience Borah showed alertness to the prejudices and changing desires of the voters and to the shifting alignments of his Senate listeners. In cooperation with other Irreconcilables he constantly modified his strategy in order to cope with the new thrusts of the proleaguers, the compromise efforts of the Mild Reservationists, and the persuasion of the Lodge group. He re-emphasized those arguments and emotional appeals for which he had earlier received vigorous response from the senators, from his popular rallies, and from those who wrote him. He launched new contentions when circumstances rendered them timely and pertinent.

THE SPEECHES

During the League controversy Borah delivered in the Senate twenty-five deliberative speeches, which may be divided into three groups. The first is composed of five more or less impromptu efforts which grew out of debate on the floor. The second group, twelve in number, were prepared but were seriously altered by questions and interruptions. The seven remaining speeches were carefully prepared and were characterized by few interruptions.

Immediate Preparation for Controversy. "The first qualification of an orator," said Borah, "is that he be master of his subject. The second that his subject be master of him."²⁵ In the League controversy he demonstrated that he practiced what he preached, for his preparation

was extensive, and his sources were numerous. His immediate preparation dated back at least to 1915.²⁶ His immediate sources included the following: a wide list of newspapers,²⁷ magazines,²⁸ and books;²⁹ his correspondence with personages such as Albert J. Beveridge, ex-governor of New Jersey Edward C. Stokes, New York attorney James M. Beck, Irish-American leader Daniel F. Cohalan, and hundreds of "little Americans" from all parts of the nation, who responded to his speeches and reported on trends in public opinion; his personal conferences; the Senate debates; hearings of the Foreign Relations Committee;³⁰ and the *Congressional Record*, which contained the reports of congressional proceedings, hundreds of articles, petitions, resolutions, and speeches, placed there by the senators.

Another important phase of Borah's preparation was the phrasing and testing of his ideas. Each address he delivered and each article he wrote prepared him for his subsequent remarks. Many of his arguments were presented first before popular audiences, in some cases in magazine articles, and finally before the Senate. If the argument was effective, it was usually presented a second time.

Organization. With the exception of his impromptu speeches, Borah followed the

²⁶ Borah to Alton B. Parker, December 28, 1915, "Borah Papers."

²⁷ *The London Times*, *The Philadelphia Public Ledger*, *The Chicago Tribune*, *The New York World*, *The Washington Post*, *The New York Sun*, *The New York Times*, *The Boston Herald*, and *The Christian Science Monitor*.

²⁸ *The New Statesman*, *The Round Table*, *The London Nation*, *The New Age*, *Reconstruction*, *The North American Review*, *The Nation*.

²⁹ Henry Brailsford, *A League of Nations*; Thomas F. Millard, *Democracy and the Eastern Question*; Arthur Brown, *The Mastery of the Far East*; B. L. Simpson, *The Fight for the Republic in China*; Leon Trotzky, *The Bolsheviks and the World Peace*; J. M. Keynes, *The Economic Consequences of Peace*; E. J. Dillon, *The Inside Story of the Peace Conference*.

³⁰ *Senate Documents*, 66th Congress, 1st session, 1919, Vol. X, "Treaty of Peace with Germany Hearings."

Troy, Albany, Rochester, N. Y.; Cleveland, Lancaster, Columbus, Ohio; Fort Wayne, Ind; Huntington, W. Va.; Chicago, Ill.; St. Joseph, Mo.; Topeka and Wichita, Kan.; and Tulsa, Okla.

²⁴ Between Sept. 10 and Sept. 14, 1919, he spoke in the following cities: Chicago, Ill.; Omaha, Neb.; Fort Dodge and Cedar Falls, Iowa.

²⁵ "Lincoln the Orator," *American Problems*, p. 34.

classical pattern of introduction, thesis, discussion, and conclusion. The logical pattern of his speeches was easy to follow and for the most part the divisions were readily discernible. The reception afforded a speech in the Senate, nevertheless, altered its structure somewhat. Those efforts submitted to frequent and prolonged heckling naturally were more loosely organized, longer, and contained much inserted material in the form of interruptions, questions, and volunteered information. Organization and the ability to maintain his preconceived plan in spite of interruptions were among Borah's strong points.

His Premises and Logical Proofs. Underlying his contentions were several basic assumptions relating to nationalism, isolation, democratic government, and treaty obligations. Unless he was challenged by the opposition he devoted little time to proving these tenets of his philosophy, which were the product of his entire political career.

In this controversy he frequently enunciated his concepts of nationalism and isolationism. Proudly he asserted that his basic tenets came from Washington, Jefferson, Monroe, and Lincoln. He praised "the national spirit" which had aroused the Thirteen Colonies to rebel against England, which had stirred the peoples of Europe to unite against Napoleon, and which had inspired South Americans to throw off the Spanish yoke. This same nationalistic spirit of the nineteenth century, he thought, should be the guiding principle of this peace settlement, rather than internationalism which he believed destroyed love of country and transferred loyalties to a government far removed from the control of the people.³¹

Fervently he defended the freedom of

the United States to act, insisting that our system of government and our way of life were vastly superior to those of other nations. Joining the League would modify our form of government by altering the constitutional power of the President and by placing control of our foreign policy into the hands of diplomats remotely responsible to the people. These were sacrifices too great for Borah to sanction.

Borah's adherence to nationalism was not completely selfish. Unlike Beveridge and Theodore Roosevelt, he favored neither territorial aggrandizement at the expense of weaker neighbors, nor the forcing of others to accept our form of government. Vigorously and honestly he approved of the principle of self-determination for all nations, for he believed that under nationalism they could develop constitutional governments comparable to that of the United States. He feared the League because it might be used to maintain the *status quo*, to keep in subjection the peoples of Korea, India, Ireland, and Egypt.

Not escaping the influence of the ideology of manifest destiny which had been so prominent in American thinking of the nineteenth century, Borah argued that the United States must maintain its freedom "not alone for the happiness of her own people but for the moral guidance and greater contentment of the world. . . ." ³² The manifest destiny of the nation was to lead other nations in democratic and social reform by setting an example of democratic society at its best. The League, he thought, would interfere with that destiny. Possessing great confidence in the self-sufficiency and isolation of the United States he could see no need in the post war world for further ties with nations abroad.

³¹ Speech of Dec. 6, 1918, *Cong. Rec.*, Vol. 57, Pt. 1, p. 196; speech of Jan. 14, 1919, *Cong. Rec.*, Vol. 57, Pt. 2, p. 1317.

³² *Cong. Rec.*, Vol. 58, Pt. 9, p. 8783.

Hence Borah arrived at his second basic premise, which has been popularly labeled isolationism. Objecting to the term he defined his policy as "simply the unembarrassed and unentangled freedom of a great nation to determine for itself and in its own way where duty lies and where freedom calls."³³ For authority he often quoted Washington, Jefferson, and Monroe. Withdrawal from European and Asiatic affairs was the only way to protect the American way of life. In terms of Washington's Farewell Address, he denounced the League as an artificial tie and a permanent alliance with nations dominated by imperialism, militarism, and despotism. He considered the Europe of 1919 similar to the Europe of 1815. Therefore he suggested that the United States should let the European nations settle the affairs of Europe. He defined the Monroe Doctrine as a policy of self-protection.³⁴

A second type of support which Borah employed may be called interpretations. This type of discussion centered around the meaning and implications of the articles of the Covenant and their relationship to the Constitution and the traditional foreign policy. In many cases these interpretations were wholly in the realm of opinion, while others were reinforced by authority and historical example, and were tested by hypothetical cases.

Reflecting his legal training he applied a strict construction to the Covenant. He assumed that moral obligations were as binding as legal ones, that the League was to use the power granted it, that the Covenant applied to all nations on an equal basis, and that a nation joining should be prepared to carry out the League's decisions. He thought that the phrase from Article X, "the Council

shall advise," implied that the United States would be obligated, without question or qualification, to employ its full strength in prosecuting the dictates of the Council. He thought that Article XI gave the League the right to consider both a nation's internal and external affairs.

Because the Council had the power to make war and peace, he believed that joining the League constituted a fundamental change in the American government, a change which the President and Senate had no legal authority to sanction. The validity of the interpretation rested upon whether the League possessed advisory or mandatory power.

For his interpretation of the traditional foreign policy and Monroe Doctrine he did not rely upon a "strict construction" of Washington's Farewell Address or Monroe's Message of 1823, but upon the ideology which had gradually evolved in the American mind.³⁵ This practice seems justifiable, for it represented the views held by the American public.

Subsequent events have not confirmed Borah's criticisms of the nature of the League and the obligations imposed by the Covenant. Imbued with federalism as it had developed under the Constitution of the United States, Borah thought that participation in the League would menace the welfare of the nation. But the loose, flexible structure, which the members of the League altered to fit their needs and desires, did not later impose unreasonable or burdensome obligations on peaceful nations. In the League's major crises the government of the United States indicated a willingness to cooperate with the members. Furthermore it is difficult to see how the United States within the League could

³³ Speech of Feb. 21, 1919, *Cong. Rec.*, Vol. 57, Pt. 4, p. 3915.

³⁴ *Ibid.*, p. 3912.

³⁵ The development of this ideology is discussed in Perkins, Dexter, *Hands Off, A History of the Monroe Doctrine* (Boston, 1941), *passim*.

have been coerced to do what it did not choose to endorse.

In Borah's defense, however, it should be remembered that the League Covenant involved some new principles for which there was no precedent in international law. Furthermore, the Covenant in many respects was vague and indefinite. Therefore Borah as well as his pro-league colleagues was confined many times to the realm of opinion. The critic attempting to render judgment in 1943 has the advantage of reviewing the operations of the League; the senator of 1919 could only speculate as to the future.

A third division of Borah's logical forms of support may be called argument proper, that is, the speaker's specific objections to the participation of the United States in the League.

During the controversy Borah made effective use of the analogy. Although in a few cases he used figurative analogy for exposition and vividness, he usually substantiated main arguments by the historical literal analogy. Much of his defense of the traditional foreign policy was based upon the argument that conditions in the days of Washington and Monroe were similar to those following the war. In this analogy he did not strive to show the likenesses of the two periods until he was challenged from the floor. Then he listed the points of likeness, as was the case in his speeches of December 6, 1918; August 12, and September 29, 1919. This hesitancy may probably be explained upon the grounds that he believed that the majority of his listeners would accept it and that elucidation, therefore, would be wearisome.

On this analogy rested Borah's entire nationalistic philosophy. But on the occasions when Borah attempted to establish the points of likeness in this comparison he was guilty of two faults: first, selecting exceptional instances for

his proof; and second, stressing political differences and ignoring economic ties which bind the world together and which make the Washington advice difficult to follow.³⁶

Frequently he charged that the policies advocated by the League to Enforce Peace, the pro-league pressure group, were comparable to those of Prussianism. Realizing that in the past four years his listeners had been saturated with emotionalized descriptions of Prussianism, he spent little time describing it, but he devoted his entire address of January 14, 1919, to showing that the League to Enforce Peace advocated repression, permitting his auditors to make their own comparison.³⁷

On August 26, 1919, he based much of his speech on the analogy that the Japanese policy in Korea was suggestive of what the Japanese policy would be in Shantung. In this case he realized that his auditors were no more familiar with the Korean situation than that of Shantung. Consequently he traced step by step the Japanese encroachment on Korea before he discussed Japanese occupation of Shantung.³⁸

This brief analysis suggests that the amount of time Borah spent developing each analogy was largely dependent

³⁶ "While it is said that transportation has brought us closer to Europe than we were when Washington lived, Europe's primary interests are just as distinct in a multitude of the nations of Europe today as they were when Washington was upon the earth. There are some interests common to France and this country. These nations are advanced in the arts and in government and far progressed; but what is there in common between Bulgaria and Turkey and Asia and this nation today different from what it was when Washington wrote his Farewell Address?"

... Politically, we are just as far apart now as we were then, and if Washington were alive today, he could announce his doctrine with the same accuracy with the exception of two or three nations at most, just as emphatically and just as pertinently as he did when he bade farewell to his countrymen." Speech of Dec. 6, 1918, *Cong. Rec.*, Vol. 57, Pt. 1, p. 195.

³⁷ *Cong. Rec.*, Vol. 57, Pt. 2, pp. 1384-1385.

³⁸ *Ibid.*, Vol. 58, Pt. 5, pp. 4349-4355.

upon his audience. If he thought that his listeners would accept his comparison he spent little time boring them with the unnecessary details. If they were unfamiliar with the items in the comparison or if they challenged him, he attempted to establish the points of likeness.

His reading of history provided him oftentimes with material for effective analogies; likewise his reading of current materials provided him with information for arguments for specific instances, which he used many times in refutation of remarks of the opposition. During the summer and fall he made good use of contemporary accounts. On July 17, in attempting to counter the argument that the entire world wanted the League, he asserted that "the liberal organizations, the liberal sentiments, the liberal mind, and the liberal press of Europe" were against the proposal. For specific instances, he quoted eight editorials from seven different periodicals. The weakness of his proof, although not challenged on the floor, appeared in his inclusion of only English journals. In this same speech he vigorously challenged Wilson's assertion that non-participation by the United States would "break the heart of the world" by showing that China, Central Europe, Russia, India, Egypt, and Ireland would not be heart-broken in case of such a decision.³⁹ Similarly on August 18, he generalized that large numbers were protesting against the settlement and readjustment. The Koreans, the Chinese, the Egyptians, the Indians, and the Irish he cited as specific instances.⁴⁰ In his address of November 19, he offered as his thesis, "My objections to the League have not been met by reservations." In support, he briefly reviewed five objections or specific instances, each of which in turn

he supported with further proof. This speech in reality was a summary of many of the speeches he had delivered during the previous three or four months.⁴¹ In a similar manner in his speech of March 3, 1920, he proved that war aims had not been achieved, for the characteristics of "old Europe," namely, denial of freedom of the seas, conscription, secret diplomacy, and imperialism were still dominant forces at the peace conference.⁴²

In none of the examples given did Borah approach perfect induction. Skilled debaters and orators from the time of Demosthenes have found it necessary to make a wise selection of the evidence available, because of the limitation of time and the nature of audiences. Borah found this especially desirable at this time when the President and the Democrats were accusing the Republicans of attempting to delay the final vote by unnecessary speaking and parliamentary maneuvers.

In the twenty-five speeches Borah used over fifty different authorities in over seventy-five instances. His speeches of August 26, 1919,⁴³ February 10, and February 17, 1920,⁴⁴ were almost solely dependent upon authority. In the overwhelming majority of cases he first endeavored to identify his authority before quoting. On February 10 and February 17, 1920, when his authority was especially important, he devoted a paragraph to establishing the validity of his source, stressing his authority's qualifications to speak upon the subject, and the timeliness of the statement.

³⁹ *Ibid.*, Pt. 9, pp. 8781-8785.

⁴⁰ *Ibid.*, Vol. 59, Pt. 4, pp. 3796-3804.

⁴¹ Authorities quoted: E. T. Williams; Thomas I. Millard, *Democracy and the Eastern Question*; B. L. Simpson, *The Fight for the Republic in China*; Arthur Brown, *The Mastery of the Far East*.

⁴² Keynes, John Maynard, *The Economic Consequences of Peace*; Dillon, Dr. E. J., *The Inside Story of the Peace Conference*.

³⁹ *Ibid.*, Vol. 58, Pt. 3, pp. 2733-2736.

⁴⁰ *Ibid.*, Pt. 4, pp. 3934-3938.

A second query may be made concerning Borah's use of material out of context. A check of a large majority of his sources revealed that in most cases he used his sources honestly. In some instances, however, he was guilty of misinterpreting and of deleting portions inconsistent with his position. An instance of misquoting is found in his speech of February 10, 1920, when Senator Sterling asked him if John M. Keynes, from whom Borah had just quoted extensively, "discusses at all the question of America and the League of Nations." In reply Borah quoted a portion which implied that Keynes opposed the League.⁴⁵ On the contrary, Keynes clearly stated in another portion of his book that he favored "revision of the treaty . . . through the League."⁴⁶ Inasmuch as this admission would have practically destroyed the argument of his entire speech, there is reason to suspect that this deception was intentional and open to censure.

Of the four types of inductive reasoning the Idahoan used causal reasoning the least effectively. For example, on February 21, 1919, he argued that joining the League would promote internationalism of the type advocated by Leon Trotsky. Utilizing the "red" scare of 1919, he supported this argument by an emotional rather than a logical appeal.⁴⁷

On June 25 he attempted to establish that Articles X and XI necessitated conscription. Since the Covenant said nothing about conscription, one concludes that the cause was not sufficient to produce the result.⁴⁸ On two occasions he unsuccessfully strove by the use of circumstantial evidence to show a casual relation between the activities of the

League to Enforce Peace and the lawlessness throughout the country.⁴⁹ On June 25 he asserted that the League did not permit disarmament because Articles X and XI demanded military and naval support.⁵⁰ In this case he refused to consider the argument that cooperation which permitted pooling of resources would lead to reduction. On June 30 he attempted to show a causal relation between the financial support given by "Wall Street" and "big business" and the unreliability of the reports of the League to Enforce Peace.⁵¹ In the writer's opinion, he was guilty in most of these cases of the fallacy of *non sequitur*.

Predominantly the Idaho Senator relied upon types of inductive reasoning for support, but occasionally he used an enthymematic type, especially in opposing future armament and the Shantung settlement. His argument concerning armaments may be reduced to the following formal syllogism:

"An armed world is a fighting world."

The League provides for an armed world.

Therefore the League provides for a fighting world.⁵²

He assumed the validity of his major premise, but in his speeches of January 14 and June 25, 1919, he attempted to establish the minor premise pointing to the proposed increases in peace-time armament of the United States and Great Britain. Since the opposition did not challenge his assumption but his minor premise, this procedure seemed justified.

⁴⁹ Speech of Feb. 4, 1919, *Cong. Rec.*, Vol. 57, Pt. 3, pp. 2654-2656; speech of Sept. 29, 1919, *Cong. Rec.*, Vol. 58, Pt. 6, pp. 6076-6080.

⁵⁰ *Cong. Rec.*, Vol. 58, Pt. 2, p. 1741.

⁵¹ *Ibid.*, pp. 2063-2067.

⁵² "An armed world is a fighting world. Nations armed to the teeth are not elements of a peaceful world, and unless we can find a provision in the league which gives us the assurance that a program has been provided which can be enforced and carried out, it is not fair to the people of the world to say, as has been repeatedly said upon the public rostrum, that the league means disarmament." Speech of June 25, 1919, *Cong. Rec.*, Vol. 58, Pt. 2, p. 1738.

⁴⁵ *Cong. Rec.*, Vol. 59, Pt. 3, p. 2699.

⁴⁶ Keynes, John M., *The Economic Consequences of Peace* (New York, 1920), p. 260.

⁴⁷ *Cong. Rec.*, Vol. 57, Pt. 4, pp. 3911-3915.

⁴⁸ *Ibid.*, Vol. 58, Pt. 2, pp. 1737-1749.

The Shantung settlement, Borah contended, was "immoral" and "unjust." Reflecting his Cumberland Presbyterian training, he believed that such questions could not be settled on the basis of expediency but from an absolute standard of justice. Therefore in terms of the formal syllogism his reasoning followed this pattern:

All immoral affairs will "dishonor and degrade any peoples" who seek to uphold them.

The Shantung affair is an immoral affair. Therefore the Shantung affair will dishonor and degrade any peoples who seek to uphold it.⁵³

Similar to his argument on armaments he proved the common minor premise in his speeches of August 26 and October 15, 1919, but he relied on his auditors to accept his major premise without question.

In other words, he made no attempt to prove the major premises which came from his political philosophy, but he used the minor premises for the theses of his talks.

Therefore, in summary, it appears that many factors entered into Borah's choice of evidence. Of course, underlying his arguments were certain basic assumptions which, unless challenged, he felt did not necessitate extensive proof. Since the controversy hinged upon the meaning of the Covenant, and its relationship to the Constitution and the traditional foreign policy, he devoted considerable time to interpretation. Many of these interpretations were purely in the realm of opinion, but in some instances Borah attempted to reinforce them by historical precedent and

authority. A third division the writer has called argument proper. In this realm Borah preferred inductive to deductive reasoning.

Frequently he utilized historical examples in framing literal analogies. Contemporary reports he presented in arguments from specific instances, especially in refutatory material. He made extensive use of authority not only supporting his interpretations but in support of the other types. In the writer's opinion his use of causal reasoning was the least effective of the four types. As in the disarmament and Shantung issues, he occasionally enhanced his discussion by enthymematic reasoning.

Ethical and Pathetic Proofs. In answer to his adversaries who sought to disparage his integrity, he employed *ethical* proof by stressing his impersonal motives, open mindedness, tolerance, consistency, practical disposition, patriotism, and diligent preparations. He further vindicated his character by emphasizing that he preferred to debate issues, not personalities; fundamentals, not trivialities; and practicality, not theory. His avoidance of vituperative outbursts against the President and the Democratic senators demonstrated his application of some of these declarations. His attacks on ex-President Taft rather than on prominent senators was an astute way of avoiding unnecessary antagonism toward himself. Cautiously, on a few occasions he referred to his speeches as "sincere," "resolute," "honest," "open" "consistent." Nor did he overlook the value of associating his thinking with revered leaders, historical occasions, and great traditions. Because of his reputation, he probably realized that extended attempts to establish his good will were unnecessary. His anxiety over the fate of his country and the tact with which he treated his colleagues were indicative of his good intentions.

⁵³ "The Shantung affair is indefensible from any standpoint of morals or international justice or common decency. . . . It will dishonor and degrade any people who seeks to uphold it. War will inevitably follow as the result of an attempt to perpetuate it. It is founded in immorality and revolting injustice." *Cong. Rec.*, Vol. 58, Pt. 5, p. 4355.

Sensitive to the prejudices, preferences, dislikes, fears, aspirations, and loyalties of the people, Borah packed into his speeches emotional appeals in order to enhance the acceptability of his reasoning and to motivate action. Alert to the eagerness of Americans to throw off war-time innovations, he played upon their fear by suggesting that participation in the League would necessitate excessive armament, conscription, high taxes, further intervention in Europe, foreign interference in internal affairs, oppression of inferior peoples, violation of the Constitution, and the abandonment of traditional foreign policy.

Ofttimes he prodded his fellow party members, who had vivid memories of their defeat of 1912 and eight years of Democratic administration, with the predictions that the Republicans would be defeated if they supported the League. At crucial moments he further heightened their fear by threatening to bolt the party.

Appeals to patriotism, that is, praise of great moments, revered leaders, and noble traditions, served to stir his auditors. He stimulated hatred by associating the League with such terms as "Prussianism," "Bolshevism," "militarism," "repression," "imperialism," "secret diplomacy," all of which had repulsive emotionalized connotations. Irish-Americans were moved by his denunciations of the British Empire. He intensified his arguments concerning the Shantung settlement by appeals to justice. In February 1920, when the fanatical hate for the "enemy" commenced to wane, a similar

appeal reinforced his contention that the Treaty condemned Continental Europe to "perpetual hunger" and "chronic revolution."

CONCLUSION

Borah's *invention* in his League speeches is at many points deserving of careful study. His strength appears in his utter sincerity, his fervent purpose, his thorough knowledge, his careful preparation, and his understanding of historical trends and of audience predispositions.

But, judged in the light of subsequent events, Borah appears to be wanting in important respects which offset, to a considerable extent, his admirable qualities and reduce his stature as an orator. Borah, the ardent nationalist, was unable to recognize the changed position of the United States. His education and experience had not stirred him to visualize the broad vistas of the future. His argument remained consistent with Washington's Farewell Address and the popular interpretation of the Monroe Doctrine. A more brilliant and far seeing orator and thinker would have realized the obsolescence of the nineteenth century American foreign policy and the implications of twentieth century progress.

What shall be our final estimate of Borah? Vigorously and effectively he vocalized the sentiments of millions of his fellow Americans. But he represented the voice of the nineteenth century, a voice outmoded by twentieth century progress.

TRENDS IN AMERICAN HOMILETIC THEORY SINCE 1860*

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AFTER noting that approximately two hundred thousand sermons and religious addresses are delivered every week in America to at least twenty million people, Gaius Glenn Atkins facetiously concluded, "Being preached to is one of the principal indoor occupations of the American people."¹ For that reason, if for none more weighty, the study of the history of homiletics (variously defined as the art or science of preaching) constitutes a legitimate and significant field for research by the student of speech. To deal with its entire history would be obviously impossible here, for it extends back to the first Christian century. Various studies already have been made of special periods in America.²

Lambertson dealt with American homiletics prior to 1860. His most significant findings were for the year from 1820 to 1860, the so-called "middle period" of American history. More books on preaching began to be published during those years. A trend toward extemporaneous preaching developed. Style and arrangement of sermons became slightly less formal.

The purpose of this present study is to continue in point of time the research

by Lambertson, in an effort to discover what changes, if any, have characterized homiletic theory in this country since 1860.

Prior to 1860 John Quincy Adams' *Lectures on Rhetoric*, treatises by Ware, Ripley, and Porter, and translations of Claud's *Essay* and Vinet's *Homiletics*, had served to lay the groundwork for comprehensive instruction in the nature and methods of American pulpit oratory. Between 1860 and 1900 the rate of publication of books and articles on preaching was greatly accelerated. Works by Alexander,³ Kidder,⁴ Hoppin,⁵ Shedd,⁶ and Dabney,⁷ were released soon after 1860. They reflected the development of homiletics in this country to the status of a systematic study embracing a comprehensive treatment of all the factors concerned in the production and delivery of a sermon.

Significant events in the history of preaching theory in America were the publication in 1871 of Broadus' *Preparation and Delivery of Sermons*,⁸ which has since had more than thirty editions and numerous translations, and the establishment in the same year of the Yale Lectures on Preaching. The

* This study is, in substance, a dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy at the State University of Iowa. It was prepared under the direction of Professor A. Craig Baird.

¹ Atkins, Gaius Glenn, *Preaching and the Mind of Today*, (New York, 1934), p. 2.

² Barton, Fred Jackson, "The Contribution of Selected Works in American Homiletics from 1860 to 1880 to the Theory of Extempore Speaking," M.A. Thesis, State University of Iowa, 1939; Evans, Irwin H., *The Preacher and His Preaching*, (Washington, D. C., 1938); Lambertson, Floyd Wesley, "A Survey and Analysis of American Homiletics Prior to 1860," Ph.D. Thesis, State University of Iowa, 1930.

³ Alexander, James W., *Thoughts on Preaching, Being Contributions to Homiletics*, (New York, 1861).

⁴ Kidder, Daniel P., *A Treatise on Homiletics, Designed to Illustrate the True Theory and Practice of Preaching the Gospel*, Lanahan, rev. ed., (New York, 1864).

⁵ Hoppin, James M., *Homiletics*, (New York, 1883).

⁶ Shedd, William G. T., *Homiletics and Pastoral Theology*, (New York, 1867).

⁷ Dabney, Robert L., *Sacred Rhetoric, or a Course of Lectures on Preaching*, (Richmond, Va., 1866).

⁸ Broadus, John A., *A Treatise on the Preparation and Delivery of Sermons*, (New York, 1st ed., 1870, 30th ed. 1898).

publication of the latter, known as the Lyman Beecher Lectures, has furnished a valuable source of material for this present study. Over a hundred other books published since 1860 and many hundreds of articles found in such periodicals as *Homiletic Review*, *Bibliotheca Sacra*, *Methodist Quarterly Review*, and *Gospel Advocate*, have supplemented that evidence.

THE NATURE OF PREACHING

Prior to 1860 writers on preaching believed that its place in American life would never be seriously challenged. Kidder, Hoppin, Broadus, and almost every other authority until the end of the century took the same view. They held the authoritarian view of the ministerial office. To them the preacher was a divinely-inspired ambassador, sent to deliver the Gospel to the people. His message, largely doctrinal in nature, was subject to no change whatever. The principal aim of his sermonizing was the individual "soul salvation" of his people.⁹ Edward D. Griffin, writing in the *Homiletic Monthly* in 1879, stated the case well:

Our office is no ordinary one. We are ambassadors from the King of Kings and Lord of Lords to a revolted world. Never had men committed to them an embassy of such deep and everlasting moment. . . . The fate of millions through succeeding generations depends on our faithfulness.¹⁰

Since 1900 this view of the minister and his task has been partially supplanted by experimental and social conceptions. When J. P. Mahaffy published *The Decay of Modern Preaching* in 1882 it represented one of the first authoritative admissions that the position of the contemporary pulpit was threatened. Due, he said, to the gain in culture, the

advance in secular reform and education, the loss of novelty in the pulpit, and the quiet and even flow of modern life, it is impossible that preaching should today occupy among educated classes the high position that it once held.¹¹ Such later writers as Newton, Patton, and Fosdick have largely discarded the emphasis on ministerial authority, as they have rejected the fundamentalist interpretation of the Bible.¹² Fosdick recently said, in effect, that the days of dogmatic and authoritative proclamation from the pulpit are ended for intelligent audiences.¹³ He and others stress a social approach to men's problems. Individual salvation and interest in heaven or hell have taken a place subsidiary to group welfare and social uplift. As Behrends suggested, "It does not . . . seem to be a very high morality which cultivates decency in behavior under the pressure of future reward."¹⁴ The same author said: "It cannot be the preacher's business to populate heaven."¹⁵

Thus it is evident that thinking regarding the nature and purpose of preaching has divided in the years since 1860. Many, especially those affiliated with certain more or less conservative churches, still hold to the fundamentalist, authoritative conception of the ministerial office. To them the preacher is ambassador of a divine message. Others, emphasizing the social message, have asked the minister to base his work more on the authority of his own experience than on certain "infallible"

¹¹ Mahaffy, J. P., *The Decay of Modern Preaching, An Essay*, (New York, 1883), p. 29.

¹² Newton, Joseph Fort, *The New Preaching, A Little Book About a Great Art*, (Nashville, Tennessee, 1930), p. 139; Patton, Carl S., *Preparation and Delivery of Sermons*, (Chicago, 1938), p. 24; Fosdick, Harry Emerson, "What is the Matter with Preaching?" *Harpers*, CLVII (1928), 133-141.

¹³ *Op. cit.*, p. 137.

¹⁴ Behrends, A. J. F., *The Philosophy of Preaching*, (New York, 1899), p. 32.

¹⁵ *Ibid.*, p. 15.

⁹ Kidder, *op. cit.*, p. 225; Hoppin, *op. cit.*, p. 247; Broadus, *op. cit.*, p. 3.

¹⁰ Griffin, Edward D., "The Art of Preaching," *Homiletic Monthly*, III (1879), 396, 454, 632.

scriptures. The importance of this division, with its attendant consequences, can hardly be overestimated. Quantitatively the significance of the break away from the traditional cannot well be evaluated. Yet the fact that it has grown steadily since its inception, coupled with the influence it has exerted on all ministerial thought, makes it perhaps the most important movement in recent homiletic history.

THE SERMON

Classification

Most writers have classified sermons as textual, topical, and expository, depending upon the method of treating the text. During the latter part of the 19th century, textual and expository preaching enjoyed a tremendous popularity. Homiletical writers to whom the ministerial purpose was largely interpretative, believed that the best way in which that aim might be fulfilled was through the use of a message of Scripture as the basis and heart of the discourse. That belief has persisted to the present day.¹⁶ In 1939 Montgomery published a book entitled *Expository Preaching*,¹⁷ which gave renewed impetus to the method. On the other hand, however, those contemporary authors who reject both the authoritarian view of the ministry and the fundamentalist interpretation of the Bible, have likewise discarded the type of preaching based upon those premises.¹⁸

¹⁶ Reu, Johann M., *Homiletics*, (Columbus, Ohio, 1934), pp. 321, 428; Sharp, John K., *Next Sunday's Sermon, Suggestions on Sermon Delivery*, (Philadelphia, 1937); Schultz, Charles H., *Sacred Eloquence, A Guide Book for Seminarymen*, (Baltimore, Md., 1926); Brown, Charles R., *The Art of Preaching*, (New York, 1926), pp. 42-47.

¹⁷ Montgomery, Richmond Ames, *Expository Preaching*, (New York, 1939).

¹⁸ Fosdick, Harry Emerson, *op. cit.*, pp. 134, 135; Patton, Carl S., *op. cit.*, p. 122; Oman, John, *Concerning the Ministry*, (New York, 1937), p. 171. Oman admitted that even in the old days when people knew their Bibles, exposition was

The subject and title

Most sacred rhetoricians have been less interested in the subject of the sermon than the text. Consequently they devoted little space to the principles involved in choice of subject. The ones they suggested were generally accepted throughout the period under consideration. They believed that the theme of the sermon might well be adapted to the occasion, needs, and interests of the audience and of the speaker. One suggested guide to sermon subjects was the calendar of the church year, issued by the leaders of the various churches, which suggested topics for each Sunday of the year. Though once quite popular, its only recent advocates have been Schultz and Reu, affiliated with the Catholic and Lutheran fellowships.

As for sermon titles, the few who mentioned them agreed that they should be interesting, but definitely not sensational. As Arthur R. Macdougall recently wrote in the *Homiletic Review*:

To the list of the impossible [subjects] belong all the flashy, cheap themes which have been so in vogue among the go-getters. The very scheme is reprehensible. Some such title as "A Pair of Silk Stockings" is hung out to air. The preacher then attempts to "sweat in" a religious lesson, so-called. This is mere showmanship. A sermon cannot be produced that way.¹⁹

The text

If sermon subjects and titles received little attention, the authorities made up for it in dealing with texts. Until the turn of the century virtually every writer on the subject of homiletics answered "Yes" to the question, "Should every sermon have a text?" They defended

often tedious. He cited the example of the old farmer who expressed the opinion that "them Collosians must have been pretty clever to have understood in one sitting what parson has been four months trying to explain to us."

¹⁹ Macdougall, Arthur R., "Planting Sermons," *Homiletic Review*, CVI (1933), 109-112.

the text on the ground that it served to give authority to the discourse. They believed that its use honored the Bible as the source of religious knowledge, and served to keep the preacher in line with divine truth. By 1900, however, such men as Dale, Proudfoot, and others, were beginning to suggest that at least for the sake of variety some sermons need not begin with conventional form.²⁰ In the modern period, most writers allow the use of the text, but few regard it as essential. Some, such as Fosdick, have been especially critical of what they call the "slavery to texts."²¹ This represents a distinct departure from the prevailing view of the last century.

Analysis

The problem of analysis was, to most authorities from 1860 to 1900, mainly a problem of interpreting the scriptural basis of the sermon. Because they were fundamentalists, they held that the Bible should be interpreted with strict attention to its exact meaning. Next in their system of analysis was the selection of a theme which should concisely state the central thought of the discourse. By either a topical or textual method (using the divisions of the subject or the divisions of the text) this theme, or the text, could then be formally divided into its elements, which would form the heads of the sermon.²² Almost all recent

authors, even conservative ones, have displayed less concern for precise rules of interpretation or analysis or for minute sub-divisions.

Arrangement

All authors of works on preaching agreed, however, that the sermon should have an outline, or plan. Several quoted from Tennyson's "Northern Farmer," in which the farmer says that he often heard "parson a bummin' awaay,"

An I niver know'd whot a mean'd
But I thowt a 'ad summut to saay,
an' I thowt a said whot a owt to 'a said,
an' I comed awaay.²³

The classical sermon outline, as presented by Johnson,²⁴ Kern,²⁵ Pattison,²⁶ Hervey,²⁷ Shedd,²⁸ and others, included from four to a dozen distinct and separate parts, arranged according to the most exact rules. Divisions most frequently mentioned were the text, introduction, theme, partition, body, and conclusion. Recent authorities have eliminated the partition (pre-announcement of the divisions) completely. Some have done the same for the text and the theme. Even the introduction has been criticized as an artificial device for beginning the speech. However, such modern homileticists as Bull,²⁹ Cadman,³⁰ Reu,³¹ and Sharp,³² retain most of the parts of the sermon, thought they mini-

²³ Broadus, *op. cit.*, p. 262, e.g.

²⁴ Johnson, Herrick, *The Ideal Ministry*, (New York, 1908).

²⁵ Kern, John A., *The Ministry to the Congregation, Lectures on Homiletics*, (New York, 1898).

²⁶ Pattison, Thomas Harwood, *The Making of the Sermon, For the Classroom and the Study*, (Philadelphia, 1898).

²⁷ Hervey, George Winfred, *A System of Christian Rhetoric for the Use of Preachers and Other Speakers*, (New York, 1873).

²⁸ *Op. cit.*

²⁹ Bull, Paul B., *Preaching and Sermon Construction*, (New York, 1922).

³⁰ Cadman, S. Parkes, *Ambassadors of God*, (New York, 1925).

³¹ *Op. cit.*

³² *Op. cit.*

²⁰ Dale, Robert William, *Nine Lectures on Preaching*, (New York, 1878), p. 124; Forsyth, P. T., *Positive Preaching and Modern Mind*, (New York, 1907), pp. 28, 33; Proudfoot, J.J.A., *Systematic Homiletics*, (Chicago, 1903), p. 28.

²¹ Fosdick, Harry Emerson, *op. cit.*, pp. 134, 135.

²² Various authors called attention to abuses of divisions, or heads, particularly in the matter of number. Etter, quoting from Rogers said: "Mr. Drake's sermon has above one hundred and seventy parts, besides queries and resolutions; and yet the good man says he passed sundry useful points, pitching only on that which comprehended the marrow and substance." Etter, John W., *The Preacher and His Sermon, A Treatise on Homiletics*, (Dayton, Ohio, 1885), p. 194.

mize the importance of strict rules and encourage variety in arrangement.

Material

Regarding the material to be used in developing the heads of the sermon outline, some changes of emphasis were evident between 1860 and 1940. The Bible remains the outstanding source of material, though modern writers are also suggesting the gathering of material from the pastoral round, literature, history, and contemporary life. Less emphasis is laid on argumentative material. Controversial matter which is used for doctrinal refutation is in particular disfavor among the large majority of present day writers.

Elements of interest

The factor of audience interest received increasing amounts of attention. Anything, such as illustrations and sermon length, which might affect audience interest, was discussed. Bryan's *Art of Illustrating Sermons*³³ was a notable contribution to a subject to which such divergent minds as Beecher,³⁴ Burrell,³⁵ Haynes,³⁶ and Hervey³⁷ had given much attention. They all believed that illustrations retain interest and attention both by clarifying and enforcing the truth. As Burrell cryptically said, "People can see things better which they can see."³⁸

³³ Bryan, D. C., *Art of Illustrating Sermons*, (Nashville, 1938).

³⁴ Beecher, Henry Ward, *Yale Lectures on Preaching*, (New York, 1881).

³⁵ Burrell, David James, *The Sermon, Its Construction and Delivery*, (New York, 1913).

³⁶ Haynes, Carlyle B., *The Divine Art of Preaching*, (Washington, D. C., 1939).

³⁷ *Op. cit.*

³⁸ *Op. cit.*, p. 219. Schmauk, writing in *Homiletic Review*, XV (1888), 305-309, called attention to the fact that an illustration may epitomize an entire idea: "They pack a chapter of long-tailed sentences into a nut shell." In the same magazine, CIV (1932), 280-283, Sir John Adams recounted the story of the old Scotch divinity professor who used to assure his departing students that they might with impunity preach the same sermon once a year throughout

As for length, when he was asked, at the conclusion of one of his Yale lectures, how long the minister should preach, Beecher answered, "As long as he can make his people take his sermons."³⁹ Since 1860 the almost universal injunction regarding sermon length has been: make them short. However, the definition of the word "short" had remarkable variations, ranging all the way from Spurgeon's⁴⁰ "usually not over forty-five minutes" to the ten minutes suggested by various modern writers.⁴¹ There is no doubt that a decided trend has taken place toward shorter sermons.

Style

In 1881 when Austin Phelps wrote his authoritative work, *English Style in Public Discourse*, he defined "style" as "the general term by which we designate the qualities of thought as expressed in language."⁴² He and his colleagues of the 19th century descanted upon purity, perspicuity, individuality, energy, naturalness, elegance, and precision, as the elements of style. They particularly condemned the use of slang, faulty grammar, or colloquialisms, feeling that the

their whole ministry, if they would only take the precaution to change the text and illustrations.

Pattison, *op. cit.*, p. 268, quoted from Dr. Guthrie to the effect that: "The story, like a float, keeps it from sinking; like a nail, fastens it to the mind; like the feathers of an arrow, makes it strike; and like the barb, makes it stick."

³⁹ *Op. cit.*

⁴⁰ Spurgeon, Charles Haddon, *Lectures to My Students, A Selection from Addresses Delivered to the Students of the Pastor's College*, (London, 1875), p. 208.

⁴¹ Some of the flashes of wit for which he is famous came out in Dean Brown's discussion of sermon length. He advised, for example, that the preacher not watch the clock, but watch the audience to see if they are looking at their watches. (Brown, Chas. R., *op. cit.*, p. 97). Talking to young ministers he said, "If you have not struck oil by that time [35 or 30 minutes] the chances are that you are boring in the wrong place." (*Ibid.*, p. 120).

⁴² Phelps, Austin, *English Style in Public Discourse, with Special Reference to the Usages of the Pulpit*, (New York, 1883; 1915), p. 2.

minister had a responsibility to present the Gospel in a dignified manner, and also to raise the literary level of his hearers.⁴³

Such later writers as Chrisman in more restricted fashion considered "style" synonymous with "use of language." They valued dignity and purity still; but Chrisman said: "There is much less fear of the vernacular than there was twenty-five years ago."⁴⁴

Among these later writers has also gone up an especially loud chorus against the use of technical, theological, or professional religious terminology, often called the "cant" phrases of religion. As Brown recently said:

You are to speak 'to every man in the tongue in which he was born.' Now no man was ever 'born' in the professional patois of the theological school. . . . It is a habit and a bad habit at that. It is an acquired taste, and in the presence of an untrained public a vicious taste.⁴⁵

Brown is one of numerous recent spokesmen for less formality and a more conversational style in sermons.

Preparation and delivery

Among even the most recent writers there was marked agreement that the sermon should be prepared in writing, at least during the first years of the minister's practice. Authorities believed, in common with some secular speech experts, that writing is conducive to a better style and more exact statements. Those who voiced objections to the method did so on the ground that it might lead to the development of an essay style.

⁴³ *Ibid.*, p. 70.

⁴⁴ Chrisman, Lewis H., *The English of the Pulpit*, (New York, 1926), p. 37.

⁴⁵ Brown, Charles R., *op. cit.*, p. 116. The same author, speaking of the long and involved sentences which sometimes adorn a sermon, said, "If it is a full Sabbath day's journey from a man's nominative case to his leading verb, there are a great many tired, reluctant minds in any congregation which will decline to make the trip." *Ibid.*, p. 101.

The trend toward the extemporaneous manner of delivery, established by Lambertson⁴⁶ and Barton,⁴⁷ was accelerated after 1860. The influence of Storrs,⁴⁸ Park,⁴⁹ and Behrends,⁵⁰ was such that extempore sermon delivery is almost universally advised by preaching theorists today.⁵¹

Agreement was general that effective delivery is a basic attribute of good sermonizing. Sharp and other recent authors drew their material from standard speech text-books. They emphasized audience contact, a well-modulated voice, effective bodily activity, and correct pronunciation as essentials to proper speaking. Later writers particularly endorsed the conversational tone while preaching, with Reu vigorously condemning those who depart from it:

Men imagine that their speech in the pulpit must differ from the speech of ordinary life, and so they strive, as Kleinert puts it, 'to achieve solemnity by means of a preternaturally deep or a high speaking tone, a staccato utterance, a nasal sing-song, a thundering pathos, or an elegiac whine.' And as a result our pulpits are filled, as Corson says, 'with abominable drawlers, clatterers, squeakers, chanters, and monglers in monotony.'⁵²

CONCLUSIONS

Homiletic theory in America has pursued, in recent decades, two divergent paths. Practically all sacred rhetoricians prior to 1900, and many since, followed the classical conception, developed in

⁴⁶ *Op. cit.*

⁴⁷ *Op. cit.*

⁴⁸ Storrs, Richard Salter, *Conditions of Success in Preaching Without Notes. Three Lectures Delivered Before the Students of the Union Theological Seminary, Jan., 1875*, (New York, 1875).

⁴⁹ Park, E. A., "Preaching Extempore," *Bibliotheca Sacra*, XXIX (1872), 339-383, 720, 770.

⁵⁰ *Op. cit.*

⁵¹ Storrs was especially influential in causing young preachers to turn to the extemporaneous method. He even delivered extemporaneously the lectures that comprise his book, and many another homiletician quoted, often verbatim, from these lectures.

⁵² *Op. cit.*, p. 511.

America by Porter, Kidder, Hoppin, Beecher, Broadus, and their school. Its basic tenets have remained virtually unchanged through three generations of development by such men as Pattison, Sharp, Haynes, Schultz, Bull, and Reu. To them the sermon was and is the product of a man divinely inspired to interpret the Bible and the Church to his people, to the end that salvation from sin might result. This message, with its text, its enrichment of Biblical and doctrinal material, its elaborate structure, its somewhat elevated rhetoric, and its presentation through verbatim memory or reading, reflected the adherence to the orthodox homiletic pattern not fundamentally different from that followed by Edwards and other early American divines. Only in regard to style, delivery, and organization have recent years seen some relaxation from

the strictness of this sermonic formula.

At the same time and in parallel development, since about the close of the last century a sharply different point of view has arisen, through the instrumentality of such theorists as Behrends, Hoyt, Calkins, Patton, C. R. Brown, and Fosdick. These authorities look upon the sermon as an attempt on the part of the minister to interpret the social and ethical problems of the hearers in the light of Christian principles. General social uplift of the community becomes the primary aim of preaching. According to this conception the discourse needs neither text nor elaborate outline. The materials of the speech may be drawn from any available sources. And in regard to language and delivery this group, even more strongly than the other, insists upon flexibility and informality.

A QUESTIONNAIRE STUDY OF THE CAUSES OF SOCIAL FEARS AMONG COLLEGE SPEECH STUDENTS*

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THIS is the second and final report on the results of an investigation of social fears among college speech students. In the first article,¹ a method of securing data on the emotional experiences of speakers was described, and an analysis was presented showing the contributory values of the individual items included in the Personal Report on Confidence as a Speaker (PRCS). Scoring methods were discussed, and reliabilities were reported. Correlations of social fear with indexes of academic

achievement and intelligence, personality, and speech skill were given. The main criterion of social fear employed in the previous analysis, and the one used in the further investigations here reported, was the PRCS score, which was computed as the algebraic summation of the "yes" responses to one hundred and four descriptive statements. In the following discussion, "low score" will mean that the subject described himself as being fearful before an audience, and "high score" will mean that he described himself as being confident.

Confidence and Vocal Behavior. A considerable number of the students included in the investigation of social fears

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¹ Gilkinson, H., "Social Fears as Reported by Students in College Speech Classes," *SPEECH MONOGRAPHS*, IX (1942), 141-160.

were also subjects in a study of voice and personality carried out by Hurd.² One hundred and thirty-two men and two hundred and one women were rated by four teachers of speech on pleasantness of voice quality, amount of pitch variation, and vocal intensity. Exceptional care was exercised in controlling the experimental situation. The subjects read a selection of prose material (same selection for all speakers) behind a screen, where they could be heard but not seen by the judges. Under these circumstances the ratings could, of course, be influenced only by vocal behavior, since speech content was held constant and personal appearance was excluded as a stimulating factor. The inter-correlations between these ratings and PRCS scores are given in Table I.

Table I
Correlations Between Confidence
and Teachers Ratings on Voice

	Men	Women
	r P.E.	r P.E.
Quality	.21 ± .055	.16 ± .046
Pitch	.40 ± .046	.31 ± .043
Force	.62 ± .033	.38 ± .041

It will be noted that the correlations for voice quality are too low to fully satisfy the requirements for statistical significance. The remaining coefficients are significant, and constitute evidence of a definite and positive association between social confidence and vocal behavior. A substantial relationship is indicated for vocal intensity among male subjects. The correlation (.62) is among the highest representing relationship between vocal behavior and personality reported to date. Stagner³ found a correlation of .80 between confidence and vocal intensity with a small group of

subjects, and Moore⁴ found a correlation of .78 between neuroticism and unpleasantness of voice quality. The trend of correlation, however, between voice and personality in this and other studies is generally low.

QUESTIONNAIRE RESPONSES

The chief purpose of those parts of the investigation with which this report is concerned was the exploration, description, and definition of conditions associated with social fear and confidence. The data for this study was provided through the use of a questionnaire especially prepared for students of speech.⁵ The forms were filled out by 168 male students and 264 female students in Fundamentals of Speech at the University of Minnesota at the beginning of the course and before any classroom speaking had been done. The Personal Report on Confidence as a Speaker (PRCS) was filled out by each subject approximately one month later.⁶ The subjects were placed in quartile groups, men and women separately, according to their PRCS scores, and the questionnaire data of these groups were then tabulated for the purpose of comparing the responses of fearful and confident speakers.

INTERVARIABLE COMPARISONS

The statistically significant trends which emerged from the analysis of group differences are presented in Table II. The numbers in the left-hand column indicate the items in the original form of the questionnaire through which the information was secured. The first two columns of figures on the right give the frequencies with which the described

² Hurd, Melba, "A Study of the Relationship Between Voice and Personality Among Students of Speech," Ph.D. Thesis, University of Minnesota, 1942.

³ Stagner, R., "Judgments of Voice and Personality," *Journal of Educational Psychology*, XXVII (1935), 272-277.

⁴ Moore, W. E., "Personality Traits and Voice Quality Deficiencies," *Journal of Speech Disorders*, IV (1939), 33-36.

⁵ Gilkinson, H., and Knowler, F. H., *A Guidance Questionnaire for Students of Speech*, Chicago, Illinois.

⁶ Gilkinson, H., *op. cit.*, pp. 142-143.

experiences and attitudes were reported by fearful and confident speakers. Although tabulated separately originally, the data for the two sexes were combined in this table. There was, therefore, the same proportion of men and women in

the criterion groups. This means that with respect to the information here provided, and with regard to differentiation as between social fear and confidence, men and women exhibit the same general trends. Item 18 is an exception

TABLE II
INTERVARIABLE COMPARISON

	Fearful Speakers	Confident Speakers	Division	P
11. Took speech course as preparation for:				
Business	62	37	1/2	.02-.01
Club and Organization Activities	11	26	1/2	.02-.01
Informal Social Activities	17	6	1/4	.05-.02
Ministry	0	5	1/2	
Politics and Government	0	6	1/2	
Professional Radio	12	46	1/2	.01-
14. Are usually leaders in common activities	24	67	1/2	.01-
17. Frequently have to repeat remarks to be understood	48	28	1/4	.05-.02
18. Can carry a tune very well	9W	26W	1/4	.01-
19. Have had no experience in public speaking	26	9	1/2	.01-
20. Have had no important parts in plays	52	24	1/4	.01-
21. Have been in no interschool or major interclass debates	89	55	1/4	.01-
23. Have no experience in oratorical or declamatory contests	86	61	1/4	.05-.02
25. No previous instruction in speech	41	14	1/4	.01-
26. Are nervous and uncomfortable while speaking	81	21	1/4	.01-
27. Regard themselves as being "good" or "very good" speakers	11	56	1/4	.01-
28. Would like to receive training in:				
Conversation	162	131	1/2	.10-.05
Debating	19	42	1/2	.01-
Radio speaking	64	111	1/2	.01-
Telephoning	71	48	1/2	.01-
31. Have a great deal of energy	34	67	1/2	.01-
35. Frequently take pride in their accomplishments	105	137	1/2	.05-.02
36. Have felt disgraced by incident such as forgetting speech	65	42	1/2	.05-.02
37. Are afraid of having an automobile accident	43	24	1/2	.05-.02
" " " speaking in public	92	40	1/2	.01-
38. Are sensitive about blushing	62	35	1/2	.01-
" " " their personal appearance	64	29	1/2	.01-
" " " being snubbed	60	30	1/2	.01-
Worry about mistakes of etiquette	55	28	1/2	.01-
" " mistakes of grammar	19	8	1/4	.05-.02
" " lack of ability	37	17	1/2	.01-
39. Frequently feel discouraged	42	17	1/2	.01-
" " uncertain	75	52	1/2	.05-.02
" " determined	59	102	1/2	.01-
40. Describe themselves as being shy	22	9	1/4	.02-.01
" " " " socially sensitive	55	30	1/2	.01-
" " " " self-conscious	106	65	1/2	.01-
" " " " thorough	20	41	1/2	.01-
" " " " persistent	17	43	1/4	.01-
" " " " observant	24	44	1/4	.02-.01
37-38 Total frequencies for fourteen physical fears: high places, storms, darkness, burglars, getting lost, closed places, being poisoned, sharp edges, suffocating, electric shocks, catching contagious diseases, deep water, guns, taking an anesthetic	309	290	1/2	.50-.30
Total frequencies for seventeen social fears: committing some sin, dimples, complexion, being small, physical deficiencies, your sex, personal habits, bad effects of heredity, violating religious teachings, speech defects, acts of close relatives, language spoken in your home, clothing you had to wear, nicknames, your name, failures, being criticized severely	219	160	1/2	.01-

to this rule. In this case significant differentiation was found among the women, but not among the men. In the column labelled "division," the portions of the PRCS distribution involved in each comparison is indicated. The symbol " $\frac{1}{2}$ " means that the upper and lower halves of the distribution were compared, and " $\frac{1}{4}$ " means that the highest and lowest quartiles were compared. As a rule, the former type of comparison was used whenever it produced reliable differentiation. It was preferred because it involved the total group of subjects and its outcomes suggest a more consistent and inclusive trend than does differentiation between the two extreme ends of the distribution. Chi-square sums were derived, the probability values for which are given in the last column.⁷ The distributions which have a "P" value of .05 or less are probably significant, those having a value of .02 or less are certainly significant.

The interpretation of Table II proceeds in the following manner: In response to Item 11 of the questionnaire, 62 of the 216 subjects (84 men and 132 women) in lower half of the PRCS distribution indicated that they were taking speech in preparation for a business career, whereas 37 of the 216 subjects (84 men and 132 women) in the upper half of the PRCS distribution reported that they were taking speech in preparation for a business career. This uneven distribution, 62 to 37, cannot be reasonably accounted for in terms of chance. In response to Item 17 of the questionnaire, 48 of the 108 subjects (42 men and 66 women) in the lowest quartile of the PRCS distribution indicated that they frequently have to repeat remarks to be understood, whereas 28 of the 108 subjects (42 men and 66 women)

in the highest quartile of the PRCS distribution reported the same speech difficulty. The differentiation is probably significant, although it cannot be accepted with quite as much confidence as can the distribution for business career.

Perusal of the whole table reveals a number of statistical trends indicating association of social fear, or confidence, with experience, education, attitudes, and interests. The following seem particularly noteworthy:

Social Fear as a Consistent Trait. Analysis of Item 26 of the questionnaire shows that 81 (75%) of the subjects in the lowest PRCS quartile reported marked nervousness and discomfort, as compared with 21 (19%) in the highest PRCS quartile. This indicates a rather high order of consistency between the responses given in the questionnaire at the beginning of the course and those revealed in the report on confidence one month later, at least among extreme cases. Furthermore, since no classroom speaking had been done at the time the questionnaire was filled out, the reports of social fear then given must have had reference to previous experience, possibly in grade and high school. A history of social timidity is therefore implied for many of the subjects.

Experience and Training. Items 19, 20, 21, 23, and 25 show less experience in various speech activities and less formal training among the fearful subjects than among the confident subjects.

Objectives and Interests. The analysis of Item 11 shows some differential trends in the vocational aspirations and interests of fearful and confident students. Disproportionate numbers of those preparing for business and those interested in informal social activities have low PRCS scores. On the other hand, large majorities of those subjects who are interested in club and organizational

⁷ Garrett, Henry E., *Statistics in Psychology and Education*, Second Edition, (New York, 1940), pp. 377-387.

activities, the ministry, politics and government, and professional radio are above the PRCS median. A corresponding trend is seen in Item 28. A majority of those desiring training in radio are above the PRCS median, whereas a disproportionate number of those who wish training in telephoning fall below the medium. The latter may also be true for those interested in conversation, although the distribution is not statistically significant.

Energy. A large majority of those subjects who report having a great deal of energy (Item 31) are above the PRCS median.

Felt Difficulty in Speaking. Analysis of Item 17 shows that among the students who experience difficulty in talking, a significantly larger number are in the lowest PRCS quartile than in the highest quartile. Other data, not included in the table, show similar trends with respect to difficulty in controlling the voice, organizing ideas, and vocabulary. Item 27 shows that a very small number of the subjects in the lowest quartile regard themselves as being effective speakers.

Leadership. A very large proportion of those claiming to be leaders (Item 14) are above the PRCS median.

Previous Embarrassment. Item 36 shows that a somewhat disproportionate number of those who report having felt disgraced at some time by a public incident are below the median in confidence.

General Morale. The analysis of Item 39 shows that a significantly large proportion of the students who report that they frequently experience feelings of uncertainty and discouragement are below the PRCS median, and that a large proportion of those who frequently experience feelings of determination are above the median.

Self-Estimates. Item 40 reveals that very substantial majorities of those who de-

scribe themselves as thorough and observant were above the PRCS median, and inter-quartile comparisons for the terms persistent and observant show similar trends. Cumulative frequencies for the terms courteous, friendly, neat, and tactful also showed significant differentiation in the same direction.

Physical Fears. Among the physical fears listed in the questionnaire, only "having an automobile accident" produced a significant differential response (Item 37). The cumulative frequencies for fourteen other physical fears did not show a significant difference (37-38).

Social Fears. As regards social relationships, a number of sensitivities and worries produced very decided differentiation (Item 38). Furthermore, the cumulative frequencies for seventeen additional sources of sensitivity, worry, and embarrassment showed a highly significant trend (37-38).

PROBLEMS OF INTERPRETATION

Most of the trends in the foregoing section are stated in terms of the proportions of the subjects who answered the questionnaire in a particular way who fell above and below the PRCS median, or in the two extreme quartiles of the PRCS distribution. These are wholly objective statements and conform in every particular to the facts as given in the table. The conversion of these trends, however, into statements regarding the group characteristics of fearful and confident speakers requires considerable caution in the use of language. For example, one can say that a substantial majority of the subjects who indicated concern over lack of ability fell below the PRCS median, and one might venture a general rule of probability to the effect that individuals who indicate a concern over general ability report low confidence as a public speaker in two out of three cases. One

can also say with complete accuracy that a larger number of the fearful speakers than the confident speakers indicate low confidence in general ability. One can hardly conclude, however, that lack of confidence in ability is a general characteristic of the fearful speaker group, when, as the table shows, only 37 (17%) of that group so describe themselves. The same restrictions apply to the interpretation of all individual items, the analysis of which involves only a small part of the total subject group. On the other hand, group characteristics can be reasonably inferred when several items are involved in a similar general trend.

Other problems of interpretation arise from the nature of the basic data. The subjects filled out a questionnaire at the first class meeting in a speech course, and filled out the Reports on Confidence as a Speaker approximately one month later, soon after having spoken before their class sections. It is assumed that the PRCS scores reflect the emotional reactions of the subjects to an audience, and that the questionnaire provides information about the subjects, which, when analyzed, will throw some light on the nature of social fears. It could well be objected that there is no assurance that the information provided by the questionnaire is accurate, and that some of the responses are very ambiguous. Do those who claim to be leaders actually possess this distinction? What is meant by "important parts" in plays? Does "lack of ability" have any common or understandable reference? These, and many other questions could be asked.

Fundamentally, the material in Table II represents mathematically stated and statistically evaluated relationships of verbal responses. They constitute the aboveboard factual content of the study. Anything said about them by way of interpretation is wholly a matter of

ordinary inference and common sense, and on that basis one might well believe that some of the questionnaire items reflect actual conditions, others express attitudes, and some represent a mixture of both. Conditions and attitudes are both important, since both conceivably have determining influence upon the reactions of a speaker to an audience.

The research project as a whole, then, undertakes to provide an explanation of social fear as experienced by the public speaker. This involves a search for causes, or, in other words, a search for determining antecedent events and conditions, and identifications of fear as experienced before an audience with other psychological processes and functions.

With the foregoing qualifications and purposes in mind let us turn to a consideration of existing theories, to consider them in terms of the evidence at hand, to supplement them, and to examine their implications in relation to the practical problems which confront the classroom teacher.

THEORIES OF STAGE FRIGHT

Hollingworth⁸ discusses stage fright as: 1. Direct fear reaction, 2. Emotional conflict, 3. A learned reaction. Eisen-son⁹ mentions those three and adds another point of view: 4. Inadequacy of response.

There seem to be ample reasons for discussing stage fright as a fear phenomenon. The PRCS blank employed in the present study included a list of terms, and the subjects were asked to check those which described their reactions while addressing an audience. The following seem to indicate fear symptoms such as might be produced by

⁸ Hollingworth, H. L., *The Psychology of the Audience*, (New York, 1935), pp. 209-217.

⁹ Eisen-son, J., *The Psychology of Speech*, (New York, 1938), pp. 261-265.

physical danger: trembling (41%), sweating (25%), dry mouth (14%), rapid heart beat (49%), short breath (23%), tense throat (18%), tense face (14%), tense body (41%). The percentages give the proportions of the total subject group who reported the various reactions. These symptoms appeared more frequently among the students who were below the PRCS median than among those above the median, in ratios of approximately two to one. These facts warrant the identification of social fear with physical fear so far as the response itself is concerned, for the symptoms are similar, in some cases at least. On the other hand, the conditions which elicit the response are quite different (Table II, Item 37-38). Fearful and confident speakers seem to react in similar fashion to physical danger, automobile accidents excepted, but tend to react quite differently to social situations and to other matters having definite social implications. In other words, the identification of social and physical fear is almost wholly in the response, and not in the stimulus. A man might be a model of calm courage on the battlefield, and yet show symptoms of nervousness or fear when called before his regiment to be decorated for his valor.

The theory that stage fright involves an emotional state arising from conflict between craving an audience and at the same time fearing an audience is interesting, but there is little in the present study which throws any further light upon it. A good many subjects showed a bivalent attitude toward an audience, i.e., they indicated both fear and enjoyment, but this condition did not seem related to stage fright. However, the data does not provide a crucial test of the theory. Nor does the study have any direct bearing on Eisenson's discussion of stage fright as inadequacy of response,

which appears to be more descriptive than explanatory.

The remaining theory holds that stage fright is a learned response. Reactions of fear, shame, or embarrassment become conditioned to certain aspects of the situations in which they occur, which in turn serve as efficient stimuli for the recurrence and reinstatement of the original response at a later time. The originating experience might occur in the presence of an audience, and later be reinstated in the same situation. Or it might originate in some other situation, and through conditioning become associated with audience situations. This is an interesting theory, and appears to have the support of considerable clinical evidence. It has merit also in pointing to definite and understandable causes, and in focusing attention upon individual diagnosis. Its chief weakness, in the opinion of the present writer, is that it ascribes too much to isolated experience. Item 36 (Table II) of the questionnaire throws some light on the occurrence of embarrassing experience in the life histories of confident and fearful speakers. The comparison favors the former group, but not greatly so. Apparently a considerable number of the confident speakers felt disgraced at some time or another by some public incident, but the experience seemed to have little or no permanent effect upon them. This indicates that although isolated experiences may serve as inciting causes of habitual fear, the characteristics of the experiencing individual are just as important, if not more so.

SOCIAL FEAR AND SELF-EVALUATION

A trend has been noted in the data of the present study indicating relatively low self-evaluation on the part of the fearful speakers. It appears in their estimates of their own speech prowess; only

11 of those in the extreme quartile regard themselves as good or very good speakers. This is not surprising, in view of the fact that the reports on confidence (PRCS) were based upon the delivery of a public speech. It is important to note, however, that this tendency toward low self-evaluation expresses itself in matters which have no ostensible and direct relation to the act of speaking in public. Relatively small numbers of the fearful speakers indicate pride in achievement, leadership in common activities, great energy, determination, thoroughness, persistence, good habits of observation. On the other hand, relatively large numbers of fearful speakers describe themselves as being discouraged, uncertain, sensitive, shy, self-conscious, lacking in ability.

It seems probable that in some cases at least these low self-evaluations are correlated with objective facts. A certain amount of social awkwardness, and lack of responsiveness, can be induced by self-consciousness, and a circular causal relation established between self-attitudes and behavior which serves to intensify the individual's self-deprecation and increase his social ineptitude. On the other hand, there is evidence that the fearful students subject themselves to a definite under-evaluation.

This came to light in some of the class work. At the beginning of the course, and before the PRCS scores were secured, the subjects made voice recordings. These were played back before the class, and in some sections the students were asked to rate the records for general speech effectiveness, their own as well as their classmates. This provided an opportunity to compare the self-ratings of some of the individual subjects with the average rating given them by their classmates. In general, the subjects tended to rate themselves lower than did their

classmates, but the trend was more pronounced among the fearful students than among the confident ones. It is particularly interesting to find this self-devaluation emerging in a situation where the objective stimulus, the record, was the same for all judges.

There appears to be no real basis for self-deprecation among the fearful students so far as intellectual ability and achievement are concerned, the correlations of PRCS scores with high school rank and intelligence test scores being approximately zero.¹⁰

The relatively high incidence of self-devaluation among the fearful speakers is perhaps the most significant single fact emerging from the present study. It suggests that a somewhat generalized sense of inferiority is a primary cause of fear as experienced before an audience. It would be easy to slip into a popular terminology and say that fearful speakers suffer from an "inferiority complex." Perhaps some of them do experience intense and persistent feelings of inferiority, but for the most part the fearful subjects in this study are normal and healthy persons who experience a somewhat greater emotional disturbance before an audience than do some of their classmates, and among whom there is a somewhat disproportionate number of individuals who have a rather low opinion of themselves. The differences which they exhibit are relative rather than absolute.

Few of them broke down before the audience. They suffered embarrassment, but they carried on and managed to get something said which at least approximated what they intended to say. Their fears did not incapacitate them, but they did in many cases make them ineffectual.

The causes of attitudes of inferiority are to be sought in the life history and

¹⁰ Gilkinson, H., *op. cit.*, pp. 156-157.

contemporary conditions of the individual. They have been adequately discussed in many sources,¹¹ and there would be little point in reviewing them here. Generalizing broadly, it may be said that almost any condition or situation which provides a threat, real or imagined, to an individual's status or adopted role can cause more or less strong feelings of inferiority.¹² Anxiety about status can become a more or less disabling emotion when the individual finds himself under the direct scrutiny of a social group, as in making a speech. Some specific causes are listed in Table II, Items 38, 37-38, others can be found in the literature.¹³

Other interpretable trends appear in the present study. Perhaps lack of training and speech experience can be regarded as causative factors; certainly, speaking before a group was a novel experience for some of the subjects. On the other hand, lack of experience is doubtless a consequence of shyness in some cases. Shyness, too, may account for the relatively low level of aspiration found among the fearful speakers, and their lack of interest in pursuits which would require them to speak in public.

THEORY FOR CLASSROOM TEACHING

There frequently appears to be an unbridgeable gap between theory and statistical research on the one hand and practical teaching on the other. The former have to do with trends which emerge from formal experiments carried out under prescribed conditions, and ultimately lead to statements which seem to bury the individual subject in abstractions. The teacher holds, and perhaps rightly so, that in practical teaching

he deals with the individual student with all of his complexities, and that empirical methods alone are valuable. It is true that the existing theories of stage fright, as such, do not tell the teacher what to do, but some of them contain interesting implications which may serve as practical directives.

Guthrie^{14, 15} has made some applications of the theory of inhibitory conditioning, negative adaptation, to the treatment of stage fright. If the fearful individual does not give way to panic while speaking, his fears subside, and during the balance of the address the audience becomes attached as stimulus to a new and more effective form of speech behavior. This, no doubt, is what happens in many cases in the speech class. The student, frightened at first, gradually "wears out" his fear response, or at least minimizes it.

The theory of negative adaptation has been applied in cases where professional performers have broken down and been unable to continue their work because of stage fright. Some informal experiments among musicians have been reported by Ullman.¹⁶ The performer was put into a number of situations involving some aspects of the fear inspiring situation until he was able to face an audience in a normal way. At each step, the fear stimulus was increased, but was always kept below the threshold of response.

Bryngelson¹⁷ has emphasized mental hygiene in speech training, and mentions personal conference, case history, inventories and tests, written and oral autobiographies, as means of uncovering the basic causes of the students' feelings

¹⁴ Guthrie E. R., *The Psychology of Learning*, (New York, 1935), p. 72.

¹⁵ Guthrie, E. R., *op. cit.* (12), pp. 220-221.

¹⁶ Ullman, M. K., "A Note on Overcoming Stagefright Among Musicians," *Journal of Applied Psychology*, XXIV (1940), 82-84.

¹⁷ Bryngelson, B., "Speech and Its Hygiene," *Q. J. S.*, XXVIII, (1942), 85-86.

¹¹ Allport, G. W., *Personality*, (New York: 1937), pp. 173-181.

¹² Guthrie, E. R., *The Psychology of Human Conflict*, (New York, 1938), pp. 346-355.

¹³ Allport, G. W., *op. cit.*, pp. 173-174.

of insecurity. The principal purpose of these methods is to increase the student's insight, and in that way to prevent the development of unwholesome compensations.

In autobiographical methods the student participates directly in the process of discovering the roots of his own emotional difficulties. That alone is sometimes sufficient to produce an improved adjustment.

Many teachers feel that they do not have the psychological background and skill in diagnosis necessary to apply the techniques of the clinic in the classroom. No doubt, larger emphasis should and will be placed on psychology in the training program of teachers of speech. In the meantime, there is every reason for supposing that the general speech courses, as now organized and taught, are serving as a functional remedy for self-consciousness and social inferiority, by giving the student an opportunity to "wear out" his fear responses through frequent classroom performances. The teacher can facilitate matters positively by wise management of the social situation in which this process of recondition-

ing is going on, by confirming the students successes, and by discouraging the unwholesome compensations which sometimes find expression in speech behavior.

SUMMARY

An investigation of the causes of social fears was carried out through the comparison of the responses of fearful and confident speech students to a formal questionnaire. A number of statistically significant trends emerged:

1. Less formal training and experience in speech activities was found among the fearful speakers than among the confident speakers.
2. The fearful speakers showed a relatively low preference for activities and vocations involving public speaking.
3. The fearful speakers showed a more marked trend than the confident speakers toward generalized low self-evaluation, and toward anxieties about matters involving their social relationships.
4. It was concluded that a generalized sense of inferiority frequently operates as a primary cause of the emotional disturbance of a speaker in facing an audience.

AN EXPERIMENTAL STUDY IN THE ANALYSIS AND MEASUREMENT OF REFLECTIVE THINKING*

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I. INTRODUCTION

Since the second decade of the present century, some philosophers and educators have turned their attention from the traditional Laws of Thought and

the canons of Proof to an investigation of what goes on in thinking. They have become interested in the *process* of thinking, whereas the older logicians and schoolmasters were concerned mainly with the *product* of thought.

Much responsibility for this shift in emphasis is usually credited to John Dewey, who, in 1910, published a small volume entitled *How We Think*. In

* This paper is based upon a dissertation directed by Dean J. H. McBurney, School of Speech, and Professor Robert H. Seashore, Department of Psychology, and accepted in partial fulfillment of the requirements for the degree Doctor of Philosophy, Northwestern University, August, 1942.

this book, Dewey undertook to describe the actual process of that kind of thinking which seemed most likely to arrive at empirically verifiable truth, and to indicate how and at what stages the application of logical tests might facilitate and improve the process.

This process of effective thinking was found to approximate the modern procedures in scientific discovery so closely that Dewey used the terms "scientific reasoning" and "experimental thinking" synonymously with his more usual term "reflective thinking."

Postulates which followed Dewey's initial analysis and were accepted by succeeding writers¹ were: (1) if the thinking which actually occurs in the process of scientific inquiry and discovery has proved effective in the realm of "science," then its methods should prove effective in solving the complex social and personal problems which confront men; and (2) if proficiency in the application of scientific method to technical problems can be learned and improved, then proficiency in thinking in the realms of social and personal problems can be learned and improved through study and practice.

In speech education Dewey's influence has found its widest and most articulate expression in the interest in discussion. The traditional forms of public speaking are concerned primarily with "outcomes of thought," with the "proof" of propositions already arrived at. On the other hand, discussion attempts to apply the logic of experimental inquiry by adopting the attitudes and following the procedures of reflective thinking.

¹ Among them: Cohen, Morris R., and Nagel, Ernest, *An Introduction to Logic and Scientific Method* (New York, 1934); Schiller, F. C. S., *Logic for Use* (New York, 1930); Burtt, Edwin A., *Principles and Problems of Right Thinking* (New York, 1928); Jastrow, Joseph, *Effective Thinking* (New York, 1931). See also Dewey's later works, including *Logic: The Theory of Inquiry* (New York, 1938).

This is not to imply that the persuader or debater has not done any reflective thinking; it is entirely conceivable, and is doubtless often the case, that the proposition which he defends is a conclusion reached as a result of scientific inquiry. Such a process of inquiry does not usually occur in the actual speech situation, however; in the speech there occurs only "the reasoner's own *ex post facto* version, rearranged as a logically cogent 'proof'..."²

The "sociological" approach to the teaching of public speaking, with its emphasis upon social responsibility and critical inquiry, has been evident not only in discussion, of course, but in new emphases in the traditional courses and in a wider recognition of the relation of speech to other fields of study.

II. THE NEED FOR MEASUREMENT

If there has been a lag between aim and accomplishment, one reason may lie in the lack of instruments for measuring the efficacy of methods used to teach skill in reflective thinking.

Experimental studies in discussion, debate, and persuasion, though numerous and valuable, have been confined largely to rhetorical considerations: i.e., the *effects* of speeches or discussions or debates, in terms of changes of attitude and opinion, and, in some studies, the discernible methods which produced those effects. There appears to have existed no diagnostic and measuring instrument which would make possible a systematic study of the *process* of thinking which occurred before or during the speech situation.

In the psychological laboratories, some experimental studies have been made of certain factors within the total process of reflective thinking.³ In Brow-

² Schiller, *op. cit.*, p. 321.

³ Ruger, H. A., "The Psychology of Efficiency," *Arch. of Psych.*, II (1910), 165 ff.; Heidbreder, Edna, "An Experimental Study of Thinking,"

nell's report to the 1942 convention of the National Society for the Study of Education, however, he states that, "It is probably not unfair to say that psychological research has dealt more often with puzzles than with problems," and that "the extent of educational (as distinguished from laboratory) research on problem-solving is surprisingly limited."⁴

In none of the studies mentioned by Brownell, and in no others reported by Greene in his recent book, *Measurements of Human Behavior*⁵ or by Gibson and McGarvey in their survey,⁶ have the investigators attempted to study or measure the reflective process as it occurs in efforts to solve complex social problems. The analyses have depended upon the observation of the investigator and the verbal reports of the subjects' introspection, and the experimenters have been concerned with certain isolated factors within the pattern of the reflective process.

A number of paper-and-pencil tests which do utilize the material of social problems have been published.⁷ These tests, though useful, appear to be inadequate for the diagnosis and measure-

ment of the *process* of reflective thinking. Each test is deficient on two or more of the following counts:

1. It breaks the process of reflective thinking into what may be *superficially* distinct and uncoordinated units.
2. Even in measuring such units, the following factors or steps are not considered:

- a. The formulation of a problem
- b. The analysis into major variables
- c. The determination of criteria and application of them to the evaluation of possible solutions
- d. The construction and comparison of hypotheses

3. It deals with a great variety of problems—each item relating to a different problem, in most tests—whereas the need in actual life situations (and the need in discussion and other forms of public speaking) is *to think through* a particular problem.

4. It emphasizes the logic of *intentional* reasoning—the discrimination among formally valid and invalid conclusions and "reasons" for conclusions—rather than the logic of *constructive* reasoning or scientific discovery. In fact, those tests which require the subject to check a conclusion and then to check reasons for his choice appear to be measuring little except expertness in "rationalizing."

III. THE OBJECT OF THIS STUDY

There appears to be a need for a paper-and-pencil type of test which will facilitate the diagnosis and measurement of the process of reflective thinking. It is toward the construction of such a test that this study has been directed. That such an instrument may be of value to the teacher of discussion seems obvious; that it may also be of use to other teachers who believe that critical inquiry should precede "intentional" reasoning

Arch. of Psych., XI (1924), 165 ff.; Maier, N. R. F., "Reasoning in Humans," *J. Comparative Psych.*, XX (1930), 115-143, and "An Aspect of Human Reasoning," *British J. Psychol.*, XXIV (1933), 144-155; Seashore, Robert H., "The Pyramid Puzzle," *Am. J. Psych.*, LI (1938), 549-557; Woodworth, R. S., and Sells, S. B., "An Atmosphere Effect in Formal Syllogistic Reasoning," *J. Exper. Psych.*, XVII (1935), 549-557; Burack, Benjamin, "Methods of Attack on Representative Reasoning Problems," Ph.D. Dissertation, Northwestern University, 1940.

⁴ Forty-First Yearbook, (1942), pp. 417-18.

⁵ Green, Edward B. (New York, 1941).

⁶ "Experimental Studies of Thought and Reasoning," *Psych. Bull.*, XXXIV (1937), 327-350.

⁷ Noll, Victor H., "What Do You Think?" (New York, 1934); Wrightstone, J. Wayne, "A Test of Critical Thinking in the Social Studies" (New York, 1939); Thouless, Robert H., tests appended to *How to Think Straight* (New York, rev. ed., 1941), pp. 209-233; Progressive Education Association, *Evaluation in the Eight Year Study, Social Problems Series* (Chicago, 1938-1940); Watson, Goodwin and Glaser, Edward M., "Tests of Critical Thinking" (New York, 1939).

in support of a proposition, is no less desirable.

IV. PROCEDURE IN TEST CONSTRUCTION

Basic Assumptions: The Pattern of Reflective Thinking. The experimental procedure of the writer has been based upon an assumption of the correctness of Dewey's description of the steps in the reflective process:

(1) A felt difficulty; (2) its location and definition; (3) suggestion of possible solutions; (4) development by reasoning of the bearings of the suggestion; (5) further observation and experiment leading to its acceptance or rejection; that is, the conclusion of belief or disbelief.⁸

It is in the development and testing of the implications of hypotheses or suggested solutions that "reasoning" is employed in the sense used by Dewey; that is,

The constructive or reflective thinker reasons in terms of examples, analogies, causes, and signs, and employs the syllogism for certain purposes [as an *ex post facto* check on inferences and to suggest experimental combinations of propositions], but all this is done in the "setting" or "framework" of the steps in reflective thinking.⁹

Basic Assumptions: Obstacles to Reflective Thinking. The writer has further assumed that there exist certain discoverable and classifiable obstacles to reflective thinking, obstacles which a test must be designed to reveal. The twin difficulties which many writers have stressed most are "the inertia which inclines one to accept suggestions at their face value,"¹⁰ and unwillingness "to endure a condition of mental unrest and disturbance."¹¹ "If the suggestion is at once accepted, we have uncritical thinking, the minimum of reflection...

the difference, *par excellence*, between good and bad thinking is found at this point.¹²

This primary obstacle to reflective thinking is termed by Lee the tendency toward "signal reactions"; those which are "undelayed, over-quick, automatic, impulsive, seeing similarities only, undifferentiating—in short, those which go on the assumption that what is seen is 'all' there is to be seen and known."¹³

McBurney and Hance divide the "Personal Causes" of uncritical thinking into: (1) Unintentional, such as "inability to observe, to remember, to organize, to analyze, to make hypotheses, to synthesize, to appraise," these being associated with "mental inertia, lack of interest in 'finding answers,' gullibility, and stereotyped and tabloid thinking," "dependence upon other persons' ideas or one's previous thinking," "slowness in thinking," and "excessive emotion"; and (2) Intentional, including "self-interest, self-esteem, dominance of low interests, desire to imitate, prejudice, desire to convert others, and the tendency to rationalize."¹⁴

A hindrance to reflection recognized by some writers may be the result of "negative conditioning"—i.e., the tendency to *reject* all suggestions without investigation or reasoning.¹⁵

The experimental studies of problem-solving and reasoning have indicated no important obstacles other than those described: Maier's recognition of the importance of a wrong "direction" in blocking problem-solving is essentially a recognition of the influence of habit and the inability to call up varying hypotheses; Seashore found that some of his subjects did not "stop to think" long enough to imagine moves in his pyramid-

⁸ *How We Think* (Boston, 1910), p. 72.

⁹ McBurney, James H., and Hance, Kenneth G., *Principles and Methods of Discussion* (New York, 1939), p. 185. Italics are the present writer's. Bracketed insert from pp. 196-198, *op. cit.*

¹⁰ Dewey, *How We Think*, p. 13.

¹¹ *Ibid.*

¹² *Ibid.*

¹³ Lee, Irving J., *Language Habits in Human Affairs* (New York, 1941), p. 197.

¹⁴ *Op. cit.*, pp. 206-8.

¹⁵ Lee, *op. cit.*, xx-xxii.

puzzle before making actual moves; Burack observed that some of his subjects drew immediate inferences from the Thurstone murder-mystery problem, rather than suspending judgment until the given facts could be thoroughly examined; Woodworth and Sells found that susceptibility to suggestion operated as an obstacle to logical reasoning from syllogistic premises.¹⁶

To recapitulate briefly: the writer has assumed that a test of reflective thinking should be based upon the steps in reflective thinking as described by Dewey; and that it should be devised so as to reveal the common obstacles to critical inquiry which have been mentioned above.

Experimental Procedure. The methods used in attempting to develop a test of reflective thinking have been largely experimental. Various forms and sections preceding the present Forms A and B were administered to 228 students enrolled at Northwestern University during 1940-41 and in the first semester of the 1941-42 school year. The results were studied both qualitatively and statistically, and in many instances were supplemented by conferences with the subjects.

The test, in essentially the same form in which it is outlined in the following pages of this paper, was then submitted to fifteen adults trained in scientific method and logic.¹⁷ Their responses were tabulated and personal conferences were held with some. Test items on which the responses of these "Judges" disagreed were either discarded or were revised to eliminate the questionable factor. In those sections requiring the ordering of items, unanimity of prefer-

ence on the crucial items (those marked first, second, and last) was considered a satisfactory criterion of validity provided the dispersion of preference on the middle items was not great.

The resulting Form A has been administered to 322 undergraduate and 7 graduate students enrolled at Northwestern University, 23 students in the debate division of the National Institute for High School Students, 29 undergraduate students at the University of Pittsburgh, and 48 undergraduate students at Iowa State College.

For the purposes of determining reliability and facilitating the measurement of improvement in critical thinking, Form B was constructed, presenting a different problem but following closely the structure of Form A. The two forms were then administered to 100 undergraduate and 3 graduate students at Northwestern University during the second semester of 1941-42, with intervals between administrations as indicated later in this paper in reporting test results. The two forms were also used for diagnosis and measurement in the debate section of 23 students in the National Institute for High School Students, summer of 1942.

The significance of the present form of the test appears to be found in the following characteristics:

1. It attempts to measure some aspects of the entire reflective process.
2. It employs testing techniques for the most part already familiar to teachers and students: ranking, multiple choice, matching. The frequent use of the method of ordering items seems to be particularly compatible with a relativistic-dynamic interpretation as opposed to an absolutist-static interpretation of life processes.
3. It utilizes subject-matter of interest to most college students and within their range of understanding.

¹⁶ See footnote No. 3.

¹⁷ Psychologists, mathematicians, physicists, chemists, logicians, and public speaking instructors with backgrounds of graduate study also in economics, sociology, law, philosophy, or the physical sciences.

4. It attempts to test the thinking of a student in relation to the solution of a single problem.

5. To some degree, at least, it provides a control for the variable of unequal factual information among individuals.¹⁸

6. It lends itself to teaching procedures and to further testing procedures.

V. A TEST OF REFLECTIVE THINKING

The test constructed by this experimenter has been tentatively entitled "Do You Think Straight?" The problem presented in Form A is that of recommending a satisfactory system of academic requirements for admission to a hypothetical liberal arts college which is to be devoted to the education of students financially unable to attend college without help. Form B poses the problem of recommending academic requirements for degrees from the same college. Although more pressing and timely problems might have proved more provocative (war marriages, or student morale during the war, for example) it will be easily seen that such problems do not lend themselves to use in a test intended for service over a period of time.

A description of Form A of the test with examples follows. As already stated, Form B presents a different problem but follows precisely the same structural form as Form A. The analysis which follows applies equally to each form of the test.

Following the introduction to the problem of recommending an admissions system for "Rogers College," is a scale consisting of 20 items designed to reveal the general attitude of the student as "critical," "uncritical," "hyper-

critical," or "dogmatic." The student is instructed to check any items which express or approximate what he is thinking at that time in regard to the problem.

A "critical" attitude is considered to be a tendency to suspend judgment until further inquiry can be carried on; a willingness to question or even disregard one's personal opinions; a disposition to ask relevant questions; a recognition of basic assumptions in regard to the problem. Among the items designed to reveal such an attitude are:

I need more information before trying to arrive at a conclusion.

What is to be the main objective of the college?

What systems of admission are in use?

An "uncritical" attitude is assumed to be a tendency toward mental inertia and suggestibility; an acceptance of hasty generalizations and unindexed terms; a lack of curiosity in finding answers. Such an attitude may be revealed by the checking of statements like these:

The system of admissions which my college uses would be okay for Rogers College.

Whatever admissions system the average liberal arts college uses would be all right for Rogers College.

By a "hypercritical" attitude is meant a tendency to reject all conclusions based upon probabilities; an unwillingness to make a tentative choice; a tendency to demand "all" the evidence and to *extend* the principles of "non-identity," "life-in-process," etc., to the point of intellectual fence-sitting. Statements constructed to express this tendency include:

The problem cannot be solved in forty-five minutes; therefore my thinking about it is a waste of time.

No choice should be made until *all* the evidence is available.

Conditions change so rapidly that no definite admissions system should be adopted.

¹⁸ Greene, *op. cit.*, p. 29: "Reasoning ability is very hard to measure on a quantitative basis, for different persons have different amounts of information which aid in the solution of the problem. . . . It is necessary to eliminate differences of relevant information in order to evaluate reasoning activities."

A "dogmatic" attitude is understood to mean an unwillingness to question personal judgments and prejudices; a tendency to ignore assumptions already made and to shift the "argument"; unawareness of abstracting; a two-valued, "either-or" orientation. Two statements designed to reveal this attitude as dominant are:

Mr. Rogers is stupid to limit admission to students without money.

I don't need to spend forty-five minutes on this problem—I can tell Mr. Rogers right now what system of admissions he should adopt for his college.

Section II deals with the verbal formulation of the problem. Preceding the exercise, however, the student is informed that the major criterion to be applied in his analysis of the problem and in his evaluation of solutions is the desire of the founder of the college to provide education for *only the most intelligent* among the financially poor. The use the individual makes of this "new fact" will be indicative of the degree to which he is willing to relinquish prejudices and think objectively.

The student is instructed to order the following ten formulations of the problem on the basis of their usefulness as starting-points in the solution of the problem:

- a. Resolved, That it is undemocratic for Rogers College to limit admission to those with superior mental ability.
- b. Picking Students for Rogers College.
- c. College—Machine of Mediocrity or Incubator for Intellectuals?
- d. Resolved, That Rogers College should limit admission to those with I. Q.'s above 120.
- e. What should be the policy of Rogers College in regard to academic requirements for admission?
- f. Who should go to college?
- g. What admission requirements will most effectively select for Rogers College students of superior mental ability?
- h. What should be the policy of Rogers

College in regard to the exclusion of unfit applicants for admission?

- i. On Educating the Educable.
- j. Higher Education for the Democratic Way of Life versus Totalitarian Selection for Propagandistic Indoctrination.

The individual's ordering of these formulations will indicate his ability to discriminate between factual terms (*e, g, b, d*) and "loaded" slogans (*j, c, i*); between relevant statements of the problem (*e, g, b, h*) and diversions (*a, c*); between specific terms (*e, g, b, d*) and vague, general terms (*f, i*); between questions opening the way to critical inquiry (*g, e*) and phrases (*b, i*) or statements (*a, d*) which do not suggest that a problem is to be solved; and between a many-valued approach (*g, e*, and to a less extent, *h*) and a two-valued approach (*a, d, c*) to the problem. Most significant, of course, are those formulations ordered first, second, and last.

The formulation considered best by the "Judges" (*g* above) is stated on the following page of the test, preceding Section III, which deals with analysis into major variables or "issues." This information is expected to furnish a control for this factor throughout the rest of the test, making it possible to determine whether or not the subject is able to discard his own preferred formulation, if different from that of the Judges, and proceed on the basis of the formulation and directions given.

The following directions are given for Section III of the test:

Often when an individual is confronted with a problem, certain questions arise in his mind, questions which he will wish answered as fully as possible before he is satisfied with any solution. Below are four groups of questions, each group being composed of three questions. Read the first group; evaluate the questions according to their significance in solving this problem by writing "1" before that question which you consider most important of the three, "2" before the second in importance, and "3" before the least im-

portant. Do the same for each of the other three groups of questions.

In ordering the groups of questions, the processes of analysis and association are involved. One question in each group is irrelevant to the main problem. Inability to concentrate upon the main problem, a tendency to divert to side issues, may be revealed here, as, for example, in a highest ranking for the first question in the following group:

Do students from poor families tend to be superior mentally to wealthier students?
Are students with the highest I. Q.'s generally the leaders in campus activities?
Are standards of scholarship uniform among the high schools from which Rogers College will draw most of its students?

High suggestibility may be indicated by a rank of first place for the third question in this group:

What types of standardized tests are available?
How accurately do psychological tests measure intelligence?
Should students be told their scores on intelligence tests?

This step in the analysis of a problem is recognized as principally "a matter of learning what kinds of questions to ask oneself,"¹⁹ but further study is needed to determine the precise nature of the process and of the obstacles which block its successful operation.

In Section IV data are presented answering the most important questions asked in Section III. The student is directed to evaluate inferences drawn from each paragraph of "facts" by checking them as True, False, Probably True, Probably False, or as based upon Insufficient Data for any judgment as to their truth or falsity. He is instructed to make his evaluations entirely on the basis of the information given in the paragraph.

To some degree this section, more

than the rest of the test, measures simple reading ability; but in a verbal "situation" this ability may correspond to habits of accurate observation, of "going to the life-facts" before drawing inferences. For example, following a paragraph of information regarding the reliability of teachers' grades is the statement: "Teachers give high grades to the students they like best." Does the student immediately mark this conclusion as "True" or "False," depending upon his particular experience, or does he look at the facts given? If he has been trained not to make hasty generalizations, he may interpret "Probably True" and "Probably False" as "Some True" and "Some False," and, still on the basis of his own experience and previous information, mark the inference "PT" or "PF"—instead of looking at the facts given. If, however, he does the latter, he finds that the conclusion was drawn from no evidence given, and that he must therefore label it "Insufficient Data."

Since the "True," "False," "Probably True," "Probably False," and "Insufficient Data" items are equal in number, this section of the test seems to make fairly sharp distinctions as follows: (1) a preponderance of "True" and "Probably True" responses and a deficiency in "Insufficient Data" responses indicates a tendency toward an uncritical acceptance of unsupported inferences and little disposition to "go to the facts"; (2) an excess of "True" and "False" responses and a deficiency in the other three categories suggests a tendency toward either, all-or-none (two-valued) judgments; (3) a preponderance of "False" and "Probably False" responses indicates the hypercritical and negativistic attitude which rejects even conclusions supported by adequate evidence; (4) and an excess of "Insufficient Data" responses may suggest an over-cautiousness, a tendency

¹⁹ Seashore, Robert H., "Experimental Methods in Psychology," unpublished work, chap. 3.

toward "academic detachment" or reluctance to draw even qualified inferences—a demand for "all" the facts.

Section V of the test consists of ten syllogisms or pseudo-syllogisms, with instructions to mark the conclusions as "Sound" or "Unsound" in terms of the premises given. The functions of the syllogism in reflective thinking are here considered to be: (1) to serve as "an *ex post facto* check or test of inferences"; and (2) "to suggest experimental combinations of propositions."²⁰ If this section of the test is interpreted in the light of this assumption, its results may prove of some value in diagnosing and measuring a student's ability to think clearly. For example, consider the following:

Many intellectually superior students are socially maladjusted. Rogers College is intended for intellectually superior students. Therefore, many students at Rogers College will be socially maladjusted.

The major premise is a critically-phrased, verifiable statement; the minor premise is a statement drawn from the information given in the test; the recognition that the conclusion is invalid may imply a discriminative ability which is definitely applicable to actual problems, rather than a memoriter application of the rule of the undistributed middle term. Again, a recognition of the unsoundness of the conclusion in the following may suggest a reasoning ability not dependent upon memorized rules concerning the number of terms in the syllogism:

All democratic governments have the responsibility of providing as much education as possible at public expense. Rogers College is not to be maintained at public expense. Therefore, Rogers College has no obligation to be democratic in choosing its students.

In Section VI, six solutions to the

problems are offered, with instructions that they be ordered in respect to their adequacy in meeting the problem as stated. Indirectly, answers to this section of the test suggest the presence or absence of the creative ability necessary to the calling up of apt hypotheses. For example, a high rank for the solution which calls for the adoption of "whatever system of admissions requirements is in use in a majority of liberal arts colleges" may be indicative of an ultra-conservatism and resistance to experimentation—characteristics usually identified with an unimaginative mind.

More directly, this section serves to measure ability to test hypotheses through reasoning, the "double movement" which Dewey has described as "the movement *toward* the suggestion of hypotheses, and the movement *back* to facts."²¹ Processes of both analysis and synthesis are involved; and the habit of looking for both similarities and differences may be indicated in the ordering of the following solutions:

2. Rogers College should admit only those ranking in the upper 25% of their high school classes.
3. Rogers College should give psychological tests to all applicants for admission, and admit only those with the highest I. Q.'s.
5. Rogers College should admit students on the bases of high rank in high school, high standard of the high school, and above-average I. Q.

It will be observed that solution number 5 above contains the essential elements of numbers 2 and 3, but with an added requisite. The student's recognition of these facts will usually result in an ordering of number 5 above the other two solutions. A tendency toward "radicalism" may be indicated by a high rank for the following solution which has been supported by little evidence in the preceding sections of the test and which

²⁰ McBurney and Hance, *op. cit.*, pp. 196 ff.; also Schiller, *op. cit.*, pp. 184-6.

²¹ *Op. cit.*, p. 81.

is the most extreme departure from the traditional systems of college admission requirements:

4. Rogers College should administer vocational aptitude tests to applicants for admission and accept only those who show ability to succeed in the professions.

Section VII requires the matching of "Advantages" and "Disadvantages" (summary statements of the information which has been given in preceding sections) with the three solutions (from the preceding exercise) which the "Judges" chose as best. The following example is given in explaining the procedure to be followed:

A 1 2 3 Low marks in courses are sometimes
D 1 2 3 the result of social maladjustment
rather than low mental ability.

The statement above suggests an "Advantage" for the solutions which recommend (1) admitting students on the basis of a high I.Q. alone, and (2) admitting students on the bases of high I.Q., high rank in high school, and high standing of the high school; it suggests a "Disadvantage" of the solution (3) providing for admission on the basis of high school record alone. The "1" and "2" should be circled opposite the "A," the "3" circled opposite the "D." The following exercise would, of course, be marked in the same way:

A 1 2 3 Students' scores on intelligence and
D 1 2 3 knowledge tests vary greatly among
the various high schools surrounding
Rogers College.

In this section of the test, perception of similarities and differences again plays an important part in the reasoning involved, as does the recognition of valid causal relationships. The relative importance of the advantages and disadvantages listed for the solutions may be largely a matter of subjective judgment, of course. The items are so chosen, however, that the numerical weight for one

solution (No. 2 in the paragraph above) is great enough that a preference for either of the other solutions probably indicates the influence of prejudice or "false direction" or fallacious reasoning in performing the necessary operations.

In the final section of the test, the subject is instructed to classify each of ten conclusions as critical, uncritical, hypercritical, or dogmatic, according to definitions given in the instructions;²² and to choose that one statement which best represents his own conclusion. One example of each of the four categories of conclusions follows:

Of the solutions suggested, that of considering I. Q., high school record, and standing of the high school seems most likely to achieve the objective stated.

You should adopt for Rogers College whatever system of admissions is in use in the average liberal arts college.

Since none of the solutions was entirely satisfactory, I shall make no recommendation. You are wrong to limit admission to "intellectuals," so I have no recommendation to offer.

An analysis of responses to this section of the test may be made on the following considerations: (1) the logical consistency of the classifications made and the final choice, with the data presented in the preceding sections of the test; (2) the consistency of the final choice with the individual's own judgments of "Advantages" and "Disadvantages" in the preceding exercise; (3) the relationship between the individual's final choice with his own characterization of it as critical, hypercritical, uncritical, or dogmatic; and (4) the relationship between the subject's responses here and to the items on the attitude scale in Section I.

The first part of this exercise presents a semantic, rather than a logical, problem. In diagnosing an individual's

²² These definitions are condensations of those given in this paper in a discussion of Section I of the test (the attitude scale).

thinking, it seems important (to the writer) to find out how the following recommendations are characterized and which of the two is chosen as a conclusion:

The only possible solution is to accept students on the bases of high I. Q., high standing in the high school, and high standard of the secondary school.

Of the solutions suggested, that of considering I. Q., high school record, and standing of the high school seems most likely to achieve the objective stated.

Obviously, the two recommendations offer the same solution; yet discrimination between them may indicate attitudes and habits essential to critical inquiry.

VI. TEST RESULTS

1. *Validity.* Inherent validity may be claimed for the test on the following bases: (1) it follows the pattern of reflective thinking as described by Dewey and others; (2) the "obstacles" implanted in the test are objectively verifiable; and (3) the test of syllogistic reasoning is based upon the traditional rules governing the syllogism.

Statistically, the test has also demonstrated validity. It has distinguished between groups of college students according to college year and according to varying amounts of specific training in logical thinking and scientific method; and between students judged by instructors to be superior, average, and inferior in constructive reasoning. Moreover, it has indicated growth in the abilities here assumed to constitute reflective thinking, over a period of time and training. Finally, the validity of the test rests upon the agreement of responses of the fifteen judges to whom it was submitted—men and women trained in logic and scientific method.

Results from administering Form A of the test to a total of 369 students enrolled at Northwestern University, the

University of Pittsburgh, and Iowa State College furnish the data presented in the following table:

Table I
Mean Scores by College Years

Year	No. Cases	Mean Score	(%) Stand. Dev.
Freshman	135	60.6	9.9
Sophomore	135	63.4	10.6
Junior	59	68.	8.5
Senior and Graduate	40	70.3	7.7

An application of the usual formula for the standard error of the difference between two means²³ indicates that the differences in the above table are significant. The difference between the freshman and sophomore means is more than two standard errors, thus would arise due to chance less than 5 times out of a hundred; the difference between the sophomore and junior means, being more than three standard errors, would happen by chance no more than 5 times out of 1000; the difference between the junior and senior-graduate means is somewhat less (between one and two standard errors) and thus might arise from chance in approximately 25 times out of 100. The difference between the freshman and the senior-graduate means is more than six standard errors—such a difference is hardly conceivable as a result of chance.

Although no attempt has yet been made to isolate and evaluate specific variables in training in terms of their effect upon ability to think reflectively, a study was made of two groups of eight students each, distinguished particularly by the differences in amount of training in critical thinking—assuming that such training results generally from courses in the physical sciences, mathematics, logic, psychology, general semantics, argumentation, and discussion, and

²³

$$\sigma_D = \sqrt{\frac{\sigma_1^2}{N_1} + \frac{\sigma_2^2}{N_2}}$$

from extra-curricular participation in debate and discussion. (The writer recognizes that other undertermined variables may operate more significantly.) Group A with a considerable amount of such training was composed of students above the freshman level (five sophomores, two juniors, one senior), Group B of freshmen with little of this training. The two groups were equated on the bases of sex and I.Q. The mean score on the test for Group A was 81.1% (Sigma, 5.6); for Group B, 60.6% (Sigma, 7.1). Inasmuch as this difference is more than six standard errors, it could not arise from chance; moreover, it is as significant as the difference between the freshman and senior-graduate means reported in Table I.

The test has been used to measure improvement in thinking in a class of thirty undergraduate students studying discussion methods at Northwestern University. Over a period of three months, the mean score improved 5.1%—from 65.8% (Sigma, 14.9) to 70.9% (Sigma, 9.3). The chances are approximately 100-20 that this difference would not arise from chance. It is interesting to note the decrease in range on test scores: from 86.4% to 19.8% on the first test, to 88.2% to 48.2% on the second test, with a corresponding decrease in the standard deviation, of course.

In thirteen class groups taking Form A of the test, the instructors ranked the students according to their estimate of the students' ability to think reflectively. Using Spearman's formula for correlation by ranks, a comparison was made between instructors' estimates and test scores. These results are shown in Table II.

Because of the small number of groups, considerable variation was to be expected. It should be noted, however, that the correlation is positive in all cases, and, except for two cases, may be

considered at least moderately significant.

Reliability. As already indicated, the method of investigating reliability was the use of a "duplicate" test. One hundred undergraduate and three graduate students at Northwestern University were given Forms A and B of the test, with a resulting coefficient of correlation of .82 (P.E. .022).²⁴ The range of scores

Table II
A Comparison of Test Scores
with Teacher Estimates of Reflective Thinking

Class*	No. Cases	r
Discussion Methods	28	.80
Debate, H. S. Institute	23	.66
Fundamentals of Public Speaking	12	.74
Fundamentals of Public Speaking	20	.09
Fundamentals of Public Speaking	20	.29
Fundamentals of Public Speaking	20	.60
Fundamentals of Public Speaking	20	.82
Fundamentals of Public Speaking	19	.95
Fundamentals of Public Speaking	21	.55
Fundamentals of Public Speaking	16	.51
Advanced Public Speaking	17	.61
Advanced Public Speaking	13	.83
Discussion Methods	30	.88

* Including groups at Iowa State College and the University of Pittsburgh, as well as Northwestern University.

on the first form taken was from 42.7% to 87.7%—a difference of 45%. On the second form, the range was from 41.4% to 8.6%—a difference of 44.9%.

The interval between test and duplicate-test was, of necessity, varied from eight hours for one class group, to one week for another, with a majority taking the tests two days apart. The coefficient of correlation for tests taken the same day was .90 (15 cases); for tests taken one week apart, .72 (17 cases); the remaining 71 subjects took the tests with an interval of two days.

Validity and Reliability of the Attitude Scale. Because it is not scored numerically as yet, Section I, the attitude scale, does not lend itself to the same procedures in analysis as the remaining sections of the test.

The twenty items in the test were first

²⁴ Pearson's Product Moment Formula

examined to determine their discriminative value. Using Form A, the responses of 202 college students were tabulated in terms of the frequency with which each of the twenty items was checked. This tabulation indicated that, for this group, one item had no discriminative value and three others had little value. A study of the frequency of responses in terms of the classification of items is shown in the following table:

Table III
Frequency of Response on Attitude Scale
by Item Classes: 202 Cases

Class	No. Responses
Critical	526
Uncritical	100
Hypercritical	201
Dogmatic	27

Further investigation indicates that a considerable number of individuals (69 of the 202) checked items in both the "critical" category and one or more of the other categories. The explanation of this inconsistency may be (1) that the categories are not mutually exclusive; (2) that the items are not sufficiently discriminative; or (3) that some individuals at the college level have been trained to some degree to think critically, but still revert at times to attitudes which may be called uncritical, hypercritical, or dogmatic. This inconsistency was accompanied by lower scores on the other sections of the test, in general, as is indicated in the following table:

Table IV
Comparison of Attitude Classifications
with Total Test Scores: 202 Cases

Category	Number of Cases	
	Above Mean	Below Mean
Critical	53	17
Uncritical	11	13
Hypercritical	11	14
Dogmatic	2	2
Inconsistent	14	55

These figures suggest that the distinction to be made in regard to attitude is between an attitude of critical inquiry and one of confusion.

A degree of reliability is indicated by the fact that 80 individuals, of the 103 used for determination of reliability, checked exactly corresponding items on Forms A and B.

Correlation with Mental Alertness Scores. A study of the relationship between scores on this test and mental alertness (Ohio Psychological Examination) scores has been made in 83 cases. The correlation coefficient for the total number is .40. For freshmen (34 cases) it is .73; for sophomores (26 cases), .08; and for juniors and seniors (23 cases), .75. An examination of data from the questionnaire which precedes the administration of the test indicates a greater variation in training factors (courses and extra-curricular activities) among sophomores than among either freshmen or upper-classmen. These facts seem to reveal that, while those aspects of reflective thinking which are measured by this test may depend upon a "college level" of general intelligence, above that level other variables operate more significantly.

The Test as a Teaching Device. The test was used as a teaching device, as well as for diagnosis and measurement, in the debate section of the National Institute for High School Students, summer of 1942. Form A was administered at the first meeting of the group and was subsequently used as a study guide in the principles and methods of critical thinking. Form B, administered after five weeks of intensive training in discussion and debate, showed a mean gain for the group (23 students) of 13.1%. The greatest improvement was in evaluating inferences, with a difference of 22.1%. The greatest gain for one individual was 26.3%—from 62.7% on Form A to 89% on Form B. Although these data are inconclusive, they may point to some value of the test as a teaching aid.

Sex Differences in Test Scores. Mean scores computed for 215 cases divided according to sex suggest that this is not a significant variable in reflective thinking as measured by this test. The mean score for men (105 cases) was 64.6%; for women (110 cases), 65.5%. Further statistical analysis of this factor has not yet been made.

VII. CONCLUSIONS

The object of this research was the construction of a test of reflective thinking. The data accumulated and reported in this paper appear to justify the following conclusions:

1. Forms A and B of the test devised by the writer and entitled "Do You Think Straight?" are sufficiently valid and reliable to be used experimentally in diagnosing difficulties and measuring proficiency in reflective thinking.
2. Those habits and attitudes which are here assumed to constitute reflective thinking are learned behaviors and may thus be affected by training.
3. Although proficiency in reflective thinking, in those aspects measured by this test, is dependent upon normal intelligence, it varies widely among individuals of the same general intelligence,

thus indicating a dependence upon other variables.

4. The test is of some value as a teaching device and study outline.

In addition, it seems possible that the test may prove to be useful in the following ways:

1. To aid in the emphasis and clarification of proficiency in reflective thinking as an objective of education in general, and of training in public speaking, in particular.
2. To aid in the evaluation and comparison of various teaching methods and of various speech activities, in terms of effectiveness in improving student's habits of thinking.
3. To aid in determining the part which critical thinking plays in effective public speaking; the relation, if any, between ability in reflective thinking and ability in certain other speech skills such as vocabulary, physical directness, etc.

Further experimentation is needed to increase the effectiveness of the test; particularly, perhaps, through an incorporation of more of the principles and techniques of general semantics, in order further to diagnose those attitudes and habits which prevent an individual from "making sense" when he talks to himself or to others.

THE EFFECTS OF HIGH SCHOOL DEBATING ON CRITICAL THINKING *

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I. INTRODUCTION

What is critical thinking, and to what extent can it be taught? Modern educators find this a topic of interesting speculation and have recently made it

the subject of educational research.¹ The

¹ An excellent survey of the problems of teaching and evaluating critical thinking is found in *Teaching Critical Thinking in the Social Studies*, 13th Yearbook, National Council for the Social Studies, (Washington, D.C., 1942).

Typical experiments in teaching the various aspects of critical thinking are these:

Allen, Myron S., "The Development of Thinking as a Major Objective of College Physics Teaching," *American Journal of Physics*, Vol. II, No. 1 (Feb. 1943), 30-33; Glaser, Edward M.,

* This study is a condensation of a dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy at the University of Wisconsin and was directed by Professor H. L. Ewbank.

present experiment was undertaken to determine whether a typical program of high school debating, which allegedly teaches participating students to "think straight," was succeeding in this objective.

The high school students who took part in the experiment were selected to represent a cross-section of the secondary school population of Wisconsin. Effects of one year of debating were measured by comparing gains in critical thinking scores of those who debated with the gains of those who had not. The measuring instrument was a battery of the Watson-Glaser tests of critical thinking. These tests will be discussed in detail later in this paper.

To clarify the concept "critical thinking" the definition given by the authors of the Watson-Glaser tests is quoted here.

Critical thinking, in the authors' judgment, involves three things: (1) an attitude of being disposed to consider in a thoughtful way the problems and subjects that come within the range of one's experience, (2) knowledge of methods of logical inquiry and reasoning, and (3) some skill in applying those methods.

Stated more specifically, critical thinking involves a persistent effort to examine any belief or supposed form of knowledge in the light of the evidence that supports it and the further conclusions to which it tends, as well as the ability to recognize problems, to weigh evidence, to comprehend and use language

with accuracy and discrimination, to interpret data, to recognize the existence (or non-existence) of logical relationships between propositions, to draw warranted conclusions and generalizations and to test the conclusions by applying them to new situations to which they seem pertinent.²

Reference to critical thinking ability in this article is in terms of this definition.

II. PROCEDURE

Five of the Watson-Glaser tests of critical thinking were used: B-AR—Logical Reasoning Test (Abstract), B-SP—Logical Reasoning Test (Area of Social Problems), C—Inference Test, E—Discrimination of Arguments Test, and F—Evaluation of Arguments Test.

In the preliminary testing (218 debaters from 25 Wisconsin high schools) the results of the two logical reasoning forms, B-AR and B-SP, correlated highly. On the assumption that the logical processes illustrated by examples of social problems were closer to student experience than those framed in the abstract test, B-AR was rejected and B-SP was retained for testing in the main experiment.

A controlled technique was devised in which certain pupils received debate training for a given length of time while other pupils of similar ability did not. In order to keep debate training as the one variable factor, an experimental and a control group were established in each participating school. Each control (non-debate) pupil was matched with a debater on three criteria: age, previous record of scholarship, and sex. Information secured concerning all pupils also included I.Q. scores, and for debaters, ratings of debate skill and records of amount of debating experience.

The battery of four critical thinking tests was administered to debaters and

An Experiment in the Development of Critical Thinking, (Teacher's College, Columbia U., N. Y., 1941); Jewett, Arno, "Detecting and Analyzing Propaganda," *The English Journal*, Vol. XXIX, No. 2, Part 1, (Feb. 1940), 105, 115; Osborne, Wayland W., "Teaching Propaganda Resistance," *Journal of Experimental Education*, VIII, No. 1, (Sept. 1939), 1-17; Woodrow, Herbert H., "Effect of Type of Training Upon Transference," *Journal of Educational Psychology*, XVIII (March, 1927), 159-172.

A three year study of teaching critical thinking carried on at Cornell University has not yet been published. The experiment, directed by Professors Howard R. Anderson and Frederick G. Marcham, attempts to discover whether the skills of critical thinking can be taught through specially prepared exercises.

² Watson, Goodwin and Glaser, Edwin, *Manual of Directions for Discrimination of Arguments Test*, (N. Y., 1939), p. 3.

non-debaters at the beginning of the 1941-42 interschool debating season and again at its conclusion. The objective of this plan of testing was to compare the gains (post test minus pre-test) in critical thinking scores of those who debated with the gains of those who had not.

The twenty-four schools chosen to participate in the controlled experiment constitute an extensive sampling of Wisconsin high school debating. Fifteen schools have enrollments of over 300, while the range of enrollment is from 68 to 2,000. Twenty of Wisconsin's seventy-two counties are represented. The towns in which the schools are located have populations from 287 to 578,249, ten of them exceeding 5,000. Judging by the records of the participating schools in competitive debate, the quality of debate coaching and skill of debaters represented runs from mediocre to superior. Debating squads range in size from four to seventeen inclusive. Twenty-five schools in the preliminary testing constituted a sampling similar to the above.

Comparisons were made on the bases of single school results and total groups. Smaller groups, 140 in each, of experimentals and controls were selected and matched closely on I.Q. scores. Results from this pairing, and from a third equating procedure using both I.Q. and pretest scores, served as a check upon the total group results. Sex and age relationships were considered to determine the influence of these factors on critical thinking scores.

III. EVALUATION OF THE WATSON-GLASER TESTS OF CRITICAL THINKING

The Watson-Glaser tests are used individually as measures of certain aspects of the thinking process. When grouped,

they are considered as a measure of skill in problem solution, or, as the authors designate it, ability in critical thinking.

The tests are all based on problem situations, and range in length from 16 to 50 responses. Time for administering them ranges from 15 minutes for test "E" to 25 minutes for test "C." Coefficients of reliability for the individual forms, based on a test-retest technique and reported in the test manuals, range from .76 to .86. Battery reliability is not reported.

The validity of these tests is established by the agreement of a board of experts (a) that each item measures what the test purports to measure and (b) that the solution to each problem is the one and only correct answer.

Item Validation

Validation of a test by expert opinion is helpful, but it does not guarantee that each item will be discriminatory in actual testing. Some statistical technique should be applied to a significant number of completed tests as a check upon the functional validity of every item.

The upper-lower halves method of estimating test item validity involves tabulating errors made by those with higher scores and comparing the totals with the errors made by the lower half. If a significant difference in number of errors for one exercise is found, the item is discriminatory, and if the greater number of errors is found in the lower half, the item is said to possess positive discrimination. In this sense it is considered to be valid.

The statistical measure of the relative significance of such discrimination is the critical ratio. It is not necessary, however, to compute a critical ratio of the difference of difficulty for each item to determine whether this difference passes the threshold of statistical significance.

One need only plot a Votaw Curve³ for the test, the group selected, and the desired standard of statistical significance.

The first 100 complete sets of post-tests to come in from the participating schools were used for item validation.

The standard of discrimination used was $3 \times$ Probable Error of the difference, a probability of 20 to 1 that such a difference would not be due to chance.

The number of invalid items in each test is shown in the following table.

TABLE I
ITEM VALIDATION

	Total Items	Number Invalid	Percent Invalid
Test B-SP—Logical Reasoning	25	7	28%
Test C —Inference	50	18	36%
Test E —Discrimination of Arguments	40	13	32.5%
Test F —Evaluation of Arguments	8	0	0

Reliability.

Garrett and Thurstone⁴ agree that the test-retest technique, used by Watson and Glaser overestimates the reliabilities of the problem-type tests. This casts doubt on the accuracy of the published reliability coefficients and raises the question of a more suitable method.

The Kuder-Richardson⁵ technique of estimating test reliability from the mean score and standard deviation of the distribution seems best suited to these tests of critical thinking.

Using this technique with 100 cases taken from the post-testing of the present experiment, results were obtained as shown in Table II.

Other steps in evaluating the tests are indicated in the following summary.

³ Votaw, David F., "Graphical Determination of Probable Error in Validation of Test Items," *Journal of Educational Psychology*, XXIV, 682-686.

⁴ Garrett, Henry E., *Statistics in Psychology and Education*, (N. Y., 1940) p. 312; Thurstone, L. L., *The Reliability and Validity of Tests*, (Ann Arbor, Mich., 1937) pp. 5-6.

⁵ Froehlich, Gustav, "A Simple Index of Test Reliability," *Journal of Educational Psychology*, XXXII, 383-386.

Summary of Test Evaluation

1. An item validation revealed a high proportion, approximately 30%, of invalid items in the test battery.

2. The "F" test, Evaluation of Arguments, was the only form which had no invalid items.

3. Reliabilities for three of the tests, B-SP, C, and E, computed by the Kuder-Richardson technique, were considerably lower than the test-retest reliabilities published in the test manuals. The F

test was not treated since its construction prohibits the use of the Kuder-Richardson formula.

4. The reliabilities of the three forms having invalid items were increased by simple elimination of those items. Battery reliability was similarly increased, but to a lesser degree.

5. Elimination of the invalid items lowered the probable error of the score for each of the three tests and the battery. The resultant increases in discriminatory power were slightly over 10% for each of the single tests and 4.4% for the battery.

6. Tests B-SP, C, and E do not discriminate reliably between tenth and twelfth grade levels. This indicates that the differences found in these abilities are probably not due to maturation or amount of school experience. Test F, Evaluation of Arguments, shows a significant difference between these levels, indicating that the ability it measures may be more responsive to training.

7. Only Test C reaches the standard reliability coefficient for group measure-

ment of .70. However, Table II shows that the reliability of the battery of three or more forms is well above this minimum.

8. An application of the Spearman-Brown prophecy formula⁶ shows that the original battery would need to be increased to 230 items to attain a reliability of .90, the standard for use with individual cases. However, if the invalid items were replaced by good ones, a length of 116 items, less than that of the original battery, would yield a reliability of .90.

gains was .14. When the experimental and control groups were matched on both I.Q. scores and pretest scores on the Watson-Glaser tests the critical ratio of the difference in mean gains was 1.26, again in favor of the debaters. There are 89 chances in 100 that this difference exists.

3. Both debaters and non-debaters showed significant gains in critical thinking scores over one debate season of approximately six months.

4. Even though the debaters and non-debaters were closely matched on I.Q.

TABLE II
RELIABILITY COEFFICIENTS

	Test B-SP	Test C	Test E	Battery B-SP, C, E
Published Reliability (Test-retest)	.82	.86	.76	...
Computed Reliability (Kuder-Richardson)	.55	.73	.61	.835

IV. DATA

Table III shows the trend of improvement in critical thinking scores in both debate and non-debate groups, and the relation of these gains to the mean gains of the combined groups.

V. CONCLUSIONS

The Effects of High School Debating on Critical Thinking Scores

1. Considering all experimental and control groups, debaters outgained non-debaters in critical thinking scores over the experimental period of six months. The critical ratio of the difference in mean gains is 1.04. Since a minimum critical ratio of 2 is required for significance we cannot conclude that high school debaters are certain to outgain non-debaters. There are 85 chances in 100 that this difference is real.

2. When the experimental and control groups were equated on I.Q. scores the debaters again outgained the non-debaters, but not significantly. The critical ratio of this difference in mean

scores the debaters showed a significant superiority on both pretests and post-tests of critical thinking. This difference is affected but little by amount of debating experience.

5. College students with high school debating experience scored consistently higher on these critical thinking tests than did those who had not debated.

6. Both debate and non-debate groups gained most on Test F (Evaluation of Arguments Test) and least on Test E (Discrimination of Arguments Test). Test C (Inference Test) registered substantial gains while gains on Test B-SP (Logical Reasoning Test) were insignificant. Evidently the abilities measured by Tests C and F are more susceptible of improvement through high school experience and maturation than are those measured by tests B-SP and E.

7. Most of the changes in scores on the critical thinking battery were due to the influence of Tests C and F. Scores on B-SP and E remain relatively stable, confirming the previous conclusion.

8. Great differences in mean gains of

⁶ Garrett, *op. cit.*, pp. 315-319.

debaters over non-debaters were found among the participating schools. In one school debaters outgained non-debaters an average of 9.45 points on battery scores, and in another the non-debaters out-gained the debaters by 12.50 points. Twelve of the twenty-three schools showed a debater advantage in mean gains; eleven showed a non-debate advantage.

Improvement of individual ability may be a result of maturation, or of conditioning influences, or a combination of the two.

The Relationship of Critical Thinking Scores to Other Factors and Abilities

1. The coefficient of correlation between I.Q. scores and scores on the Watson-Glaser tests was found to be .63.

TABLE III
SUMMARY OF DATA—CONTROLLED EXPERIMENT

	School	Debate Group		Non-Debate Group		Battery Differences
		Mean I. Q.	Mean Gain Battery	Mean I. Q.	Mean Gain Battery	
1.	N	119.9	12.75	119.5	4.30	9.45
2.	M	118.6	11.00	118.2	2.40	8.60
3.	W	123.5	14.30	114.5	9.00	5.30
4.	G	121.6	9.75	117.3	4.67	5.08
5.	P	112.6	6.88	114.3	2.50	4.38
6.	K	....	-2.00	....	-6.34	4.34
7.	R	118.2	6.40	118.8	2.57	3.85
8.	X	125.8	0.00	138.1	-2.55	2.55
9.	F	114.0	14.75	114.6	12.34	2.38
10.	T	110.5	9.00	109.0	6.75	2.25
11.	H	110.5	6.33	111.1	4.38	1.95
12.	E	118.5	4.83	114.0	4.82	.01
13.	B	123.0	4.00	116.3	4.12	— .12
14.	I	122.2	7.54	121.1	8.14	— .60
15.	U	129.3	2.33	120.1	3.08	— .75
16.	S	106.8	9.13	106.7	10.00	— .87
17.	V	123.9	9.00	120.3	10.70	—1.70
18.	O	122.6	5.40	115.6	7.55	—2.15
19.	Q	126.9	6.00	133.7	8.30	—2.30
20.	L	127.0	-1.50	123.9	2.40	—3.90
21.	A	122.8	8.10	119.8	12.90	—4.80
22.	J	124.2	-1.00	113.0	5.75	—6.75
23.	C	113.5	-2.00	111.2	10.50	—12.50
24.	D*	124.3	4.3			

Debater Mean Gain (N = 213) = 6.78

Non-Debate Mean Gain (N = 202) = 5.75

Difference = 1.02

Critical Ratio of Difference in Mean Gains = 1.04

* School had no Non-Debate group.

9. Those pupils who are more skilled in debate, according to the judgment of their coaches, make uniformly higher scores on the Watson-Glaser tests.

10. Increasing amounts of experience in high school debating are accompanied by greater average achievement on the tests of critical thought. This apparent increase in thinking ability may be a function either of improvement in the ability measured, or of the elimination of those less able in critical thinking from the group, or of both.

This shows a substantial over-lapping of the abilities measured, yet proves that they are not identical. Critical thinking scores cannot be predicted accurately from I.Q. scores if this coefficient is correct.

2. The mean I.Q. of the debaters tested in both the preliminary investigation and in the controlled experiment was 119. Evidently the high school debater in Wisconsin is considerably above the average in intelligence.

3. Students with moderately high I.Q.

scores (115-125) improved slightly more in terms of net gain in critical thinking scores than did the superior I.Q. group.

4. Scholarship accomplishment is more directly related to critical thinking scores than is I.Q., or debating skill, or amount of debate experience. The evidence suggests that the abilities measured by the Watson-Glaser tests are essential to the getting of good grades in high school.

5. High school debaters are superior in scholarship. 50% of all the debaters in the preliminary investigation were "A" students, and 35.6% were "B" students.

6. A uniform sex difference in critical thinking scores in favor of the males was found in all groups. This advantage is slightly larger than the probable error of the measure, and, since it occurred in all groups in similar amounts, may be considered significant.

7. There is but slight relationship between age and critical thinking scores within the limits of the high school age range.

VI. COMMENTS

We cannot conclude from the evidence of this experiment that debate training typical of Wisconsin high schools significantly increases skill in critical thinking. The wide variation of debate gains among the schools indicates that in some situations debate experience is very effective in accomplishing this purpose while in others it apparently does not influence critical thinking ability at all. Probably debate, like many another academic exercise, can be directed so that transfer to daily habits of thinking takes place. Or it can be taught without generalization beyond the subject matter, with the result that old thinking patterns remain unchanged.

It is apparent that Wisconsin high school debaters are well above average high school students of Wisconsin in

critical thinking. It seems probable that this ability causes the pupil to become interested in debating. Since debate work attracts those with a special aptitude in problem solution the opportunities for accomplishing much in its improvement are increased. If debaters are a superior group of people, they should be able to benefit intellectually from debate experiences more than would other students. This situation ought to permit the finest kind of specialized, individualized training for improvement of the higher mental processes.

Caution must be used in applying the findings of this investigation. Students who had high critical thinking scores at the beginning of the experiment could not register much improvement on the tests. Also, it is quite possible that the student who showed no advance in critical thinking skill over a season of debating still benefited markedly from his experiences. The tests used here give no indication of what happened to knowledge, self-confidence, speaking ability, poise, etc. of the debaters. It is reasonable to believe, however, that the student who benefited in these several categories and, in addition, made a significant gain in critical thinking score profited more from the season's work than the debater who showed no improvement on the Watson-Glaser tests but who, nevertheless, found debating definitely worthwhile.

Since the better debaters are usually the better thinkers the Watson-Glaser tests might well be used as one of the bases of selection for participation in debating. Because scholarship and critical thinking are closely related, more attention might be paid to the individual's school record as another criterion of debater selection.

The use of critical thinking tests focuses attention on the higher mental processes which operate in debate. The

various forms of the test battery are diagnostic, and indicate specific areas where particular study and effort are needed. Analysis of the tests themselves is a good teaching device to clarify the reasoning processes involved. In short,

the incorporation of critical thinking testing into the high school debating program offers worthwhile opportunities both to improve the quality of debating and to increase the benefits of the experience for those who participate.

TRAINING AND OCCUPATIONS OF IOWA BACHELOR GRADUATES IN SPEECH AND DRAMATIC ART,

1931-1940 *

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I. PURPOSE

THE purpose of this investigation was to make a study of the college training and occupations of the bachelor graduates in speech and dramatic art at the State University of Iowa in the decade, 1931-1940, as follows: first, to analyze the college curricular and extra-curricular programs of these bachelor graduates; second, to ascertain their various occupations, investigating intensively the nature of the teachers' first and second positions after receiving the bachelor's degree; and, third, to interpret these findings with the view to defining general college academic and extra-curricular programs for prospective teachers of speech working toward the bachelor's degree.

II. PROCEDURE

Speech courses and other subjects taken by the University of Iowa bachelor graduates in speech and dramatic art during the decade, 1931-1940, were systematically tabulated. These data were then analyzed in terms of yearly and

decade distribution ranges and medians of those who had taken such courses.

Grade point averages earned in all speech courses and other subjects were computed for the three hundred forty-five students and for those in this group who taught after receiving the bachelor's degree. Values 4, 3, 2, and 1 represent grades A, B, C, and D.

An investigation was made of the extent to which the Iowa bachelor graduates in speech and dramatic art participated in extra-curricular speech activities in college.

Data relating to the graduates' occupations and the demands of their first and second teaching positions after the bachelor's degree were obtained through a questionnaire.

Various teaching combinations in different areas in speech and dramatic art were also obtained. To facilitate an analysis of these combinations against the bachelor's preparation, speech and dramatic art courses were grouped into three areas, namely, dramatic production, public speaking, and speech correction. The first area included acting, directing, technical production, dramatic literature, and dramatic interpretation. Public speaking, the second area, em-

* This article represents portions of the doctoral dissertation of Eugene C. Chenoweth, accepted by the Department of Speech and Dramatic Art in the Graduate College of the State University of Iowa, February, 1942.

braced principles of speech, debate and discussion, advanced public speaking, oratory, radio, and voice and phonetics. The third area, speech correction, included speech pathology, speech correction courses, and clinical methods.

III. PERSONS INCLUDED IN STUDY

Three hundred forty-five speech and dramatic art majors received the bachelor's degree in 1931-1940. Eighty-five (24.64%) of these students had their entire four years of college work at the State University of Iowa. Two hundred sixty (75.36%) of these Iowa B. A. graduates had previously transferred to Iowa from one hundred thirty-two other institutions of higher learning in twenty-seven states. The states of Iowa, Illinois, and Missouri furnished the largest numbers of transfer students. Twenty-eight transfer students came from universities, seventy-three from four-year colleges, twenty from teachers colleges, ninety-one from junior colleges, and forty-eight transferred from two or more institutions.

IV. FINDINGS

1. Speech and Dramatic Art

The three hundred forty-five bachelor graduates presented a range of twenty-four to sixty-four semester hours toward graduation and a median of 39.8 hours in speech and dramatic art courses in the decade, 1931-1940.

The percentages of the three hundred forty-five students in this study taking the various speech and dramatic art courses are: voice and phonetics, 93.91 per cent; principles of speech, 89.28 per cent; technical production, 77.39 per cent; teaching methods, 76.52 per cent; acting, 66.96 per cent; practice teaching, 61.62 per cent; directing, 60.29 per cent; debate-discussion, 56.52 per cent; speech correction, 48.70 per cent; radio, 32.75 per cent; and dramatic literature, 20.58 per cent.

These same students exhibit medians in speech courses as follows: technical production, 6.4 hours; acting, 6.2 hours; dramatic interpretation, 6.2 hours; speech correction, 5.9 hours; radio, 5.5 hours; voice and phonetics, 5.5 hours; principles of speech, 4.1 hours; teaching methods, 4.0 hours; practice teaching, 4.0 hours; and debate-discussion, 3.9 hours.

According to percentages of enrollees in the various speech courses, these students show a variety of interests from area to area in speech and dramatic art. They reveal also a wide range in semester hours taken in the several speech studies.

2. Subjects Other Than Speech

It was found that high percentages of the three hundred forty-five graduates earned credits in English (99.43%), social studies (98.55%), and foreign language (96.23%). These students revealed substantial medians in English (16.4 hours), social studies (12.7 hours), and foreign language (12.7 hours). Eighty-five per cent of the bachelor graduates had courses in education and ninety-four per cent earned credits in psychology, showing a median of 10.1 hours in the former subject and 6.0 hours in the latter. About ninety-eight per cent of the bachelor majors in speech studied science and revealed a median of 12.1 hours in this subject. Comparatively speaking, smaller percentages of students enrolled in courses in drama, commerce, mathematics, philosophy, home economics, art, and music.

3. Scholastic Achievement

The data revealed that the three hundred forty-five speech and dramatic art bachelor majors in this investigation earned a grade point average of 2.607 in speech and dramatic art courses taken at Iowa, and 2.36 in Iowa subjects other than speech. The teachers in this group

earned a grade point average of 2.508 in speech and dramatic art courses and 2.31 in Iowa subjects other than speech. These averages, even in subjects other than speech, are higher than the all-university or the Liberal Arts College average at Iowa.

4. College Extra-Curricular Speech Activities

Two hundred of the three hundred forty-five speech bachelor graduates returned the questionnaire. One hundred thirty-three (65.5%) of these persons reported that in college extra-curricular experiences they assisted one to three times with technical phases of theatre work. Forty-three per cent of the students acted in or directed one to twenty-eight university plays. In debate-discussion twenty-seven per cent (27.5%) of the graduates appeared in one to forty intercollegiate competitive performances. Thirteen per cent delivered one to sixteen orations in intercollegiate contests. Several students (12.5%) participated in one to twenty declamatory contests. These experiences will be discussed below in terms of the demands of the teachers' positions.

5. Teaching Positions

One hundred thirty of the two hundred individuals who returned the questionnaire taught after receiving the bachelor's degree. Twelve of these teachers had taken the master's degree also and were excluded from this study, because it deals with teachers who hold only the bachelor's degree. Some individuals who did not teach were employed in the theatre, radio, and a wide variety of other occupations. Still others were married immediately after leaving college.

Locations of teachers in first and second positions show a distribution over seventeen states, the majority of whom taught in Iowa, Illinois, Missouri, and

Wisconsin. In their first and second positions, one hundred nine teachers taught in high schools, twenty-four secured positions in elementary schools, and nineteen found employments in junior high schools. These schools ranged in size from less than one hundred pupils to five thousand students. Nine individuals became faculty members in colleges. Others did not indicate the type of educational institution in which they taught.

The amount of time devoted to teaching speech varies from one-fourth to full time, with twenty-six, twenty-three, and twenty-one teachers giving one-third, one-fourth, and one-half time, respectively, to the teaching of speech in their first positions (Table I). The majority

TABLE I
PORTION OF TIME DEVOTED TO TEACHING SPEECH
AFTER B.A. DEGREE

Portion of Time	First Position	Second Position	Total
All	10	7	17
3/4	9	4	13
2/3		1	1
1/2	21	7	28
1/3	26	13	39
1/4	23	7	30
None	26	9	35
Not Indicated	3	3	6
Total	118	51	169

of the teachers (52.08%) gave instruction in the areas of dramatic production and public speaking, and eleven per cent (11.46%) taught in three areas, public speaking, dramatic production, and speech correction. Single areas were taught by thirty-two per cent (32.30%) of the teachers, as follows: dramatic production, ten per cent (10.42%); public speaking, fifteen per cent (15.63%); and speech correction, six per cent (6.25%) (Table II). One hundred six teachers taught at least thirty different combinations of other subjects, English and social studies appearing most frequently.

The number of semester hours of college preparation the speech teachers had

in each speech course they taught is shown in Table III. When comparing the demands of the positions with the teachers' academic qualifications, one notes great variability. Thirty-four per

they taught.

The speech teachers in this investigation were frequently required to direct several types of extra-curricular speech activities in their first and second positions after receiving the bachelor's degree. In comparing these teachers' extra-curricular duties with their academic training and extra-class experience in college, it was found that some teachers directed various extra-class speech activities with no training or experience in these fields. For example, twelve per cent of those who directed debate-discussion had no academic training or extra-curricular experience in debate and discussion, and thirty per cent (30.19%) of those who directed dramatic interpretation had no such training or experience in college. It was found, moreover, that still other speech teachers who had very little academic training or experience in extra-curricular speech activities were required to direct these extra-class activities.

V. CONCLUSIONS

First, the bachelor graduates in speech and dramatic art compare favorably in scholarship with those in other departments in the university.

Second, sixty-five per cent of the bach-

TABLE II
PER CENT OF SPEECH MAJORS TEACHING SPEECH AREAS OR COMBINATION OF SPEECH AREAS IN FIRST OR SECOND POSITION AFTER THE BACHELOR'S DEGREE

Speech Areas	% of Speech Majors
Dramatic Production—Public Speaking—Speech Correction	11.46
Dramatic Production—Public Speaking	52.08
Dramatic Production—Speech Correction	3.12
Public Speaking—Speech Correction	1.04
Dramatic Production	10.42
Public Speaking	15.63
Speech Correction	6.25

cent of the teachers who taught acting had no academic preparation in this field. Twenty-three per cent of those whose programs included speech correction and twenty-seven per cent of those who were assigned dramatic interpretation likewise had not taken these courses in college. On the other hand, three-fourths or more of the teachers who taught principles of speech, technical production, directing, debate-discussion, and voice and phonetics had taken some semester hours in the subjects in which

TABLE III
NUMBER OF B.A. GRADUATES WHO TAUGHT SPEECH IN THEIR FIRST OR SECOND POSITION AFTER THE BACHELOR'S DEGREE AND THE SEMESTER HOURS THEY HAD IN EACH COURSE

Semester Hours	Speech Courses											
	A	D	TP	DL	DI	PS	DD	R	VP	TM	PT	SC
17-18												1
15-16	1											1
13-14	2		1		1							1
11-12	3		2		2	2						2
9-10	4		4		12	5						2
7-8	3		2		3	9	1		3			
5-6	12	1	7	2	16	17		2	16			5
3-4	6	14	3	5	6	16	24	2	7	2	3	3
1-2	5	1			3	19	5	1				
0	19	4	1	32	16	10	6	10	2	1		5
Total	55	20	20	39	59	78	36	15	28	3	3	21
A—Acting					DI—Dramatic Interpretation				VP—Voice-Phonetics			
D—Directing					PS—Principles of Speech				TM—Teaching Methods			
TP—Technical Production					R—Radio				PT—Practice Teaching			
DL—Dramatic Literature					DD—Debate-Discussion				SC—Speech Correction			

elor graduates in speech and dramatic art who returned the questionnaire taught after leaving college; therefore, it may be concluded that the program of this department is chiefly one of teacher training.

Third, since most of the teaching positions filled by Iowa bachelor graduates require them to teach subject matter in two or three speech areas, it seems justifiable to emphasize the importance of a broad basic training in speech and dramatic art in the college preparation of prospective teachers of speech with the

bachelor's degree.

Fourth, since ninety per cent of the speech teachers were required to include other subjects in their programs of instruction, it is recommended that future teachers have at least two minors, chiefly English and social studies.

Fifth, since many positions demand speech teachers to direct various extra-class speech activities, prospective teachers of speech and dramatic art might reasonably be expected to participate in a wide variety of extra-curricular speech activities in college.

THE RELATION OF READING ABILITY AND LANGUAGE ABILITY TO SPEECH ABILITY

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FOR a period of several years, one of the present writers has been interested in securing data which might give more significant knowledge of the factors responsible for, or associated with, effective speech development. The field of personality was considered,¹ and later a study was made of the relation between *total* intelligence test scores and ability in Public Speaking and Literary Interpretation.² There have been many other studies relating to personality and speech. Most of these have been reported in *SPEECH MONOGRAPHS* or the *QUARTERLY JOURNAL OF SPEECH*. There have been some studies in other periodicals concerning intelligence test scores and ability in speech, such as those by Bryan and Wilke,³ and Gilkinson and

Knower.⁴ A recent study by Moore⁵ compared speakers of extremely good or extremely weak ability with their scores on certain knowledge and reasoning tests. No study, so far as the writers know, has been made of *specific parts* of Intelligence or Scholastic Aptitude Tests and *several phases* of speech education.

The purpose of this study was to gain more information concerning the relationship of scores on two parts of Intelligence and Scholastic Aptitude Tests to ability in certain Speech courses as indicated in grades given by instructors: Specifically, to determine what relationships exist between test scores of (a) reading ability, and/or (b) language ability and grades in (c) Fundamentals of Speech, (d) Public Speaking, and (e) Literary Interpretation.

¹ Dow, C. W., "The Personality Traits of Effective Public Speakers," *QUARTERLY JOURNAL OF SPEECH*, XXVII (Dec., 1941), p. 525.

² Dow, C. W., "Intelligence and Ability in Public Performance," *QUARTERLY JOURNAL OF SPEECH*, XXVII (Feb., 1941), p. 110.

³ Bryan, A. I. and Wilke, W. H., "Audience Tendencies in Rating Public Speakers," *Journal of Applied Psychology*, XXVI (June, 1942), p. 371.

⁴ Gilkinson, H. and Knower, F. H., "A Study of Standardized Personality Tests and Skill in Speech," *Journal of Educational Psychology*, XXXII (March, 1941), p. 161.

⁵ Moore, E., "Factors Related to Achievement and Improvement in Public Speaking," *QUARTERLY JOURNAL OF SPEECH*, XXIX (April, 1943), p. 213.

The subjects used in the study consisted of 175 students enrolled in one-hour-a-week required sophomore Oral English courses at Massachusetts State College during the academic year 1940-41.

The materials used for the study were of two kinds: The first, the percentile ratings on reading ability and language ability, were obtained from a battery of Intelligence and Scholastic Aptitude Tests⁶ administered by the Psychology Department at the beginning of the students' freshman year. The second, the grades in Fundamentals of Speech, Public Speaking, and Literary Interpretation were obtained from the grade books of instructors teaching those courses.

The procedure used was that of comparing the marks in each of the speech courses with the percentile ratings in (a) reading ability and (b) language ability, and finally (c) a multiple correlation between the speech marks and both reading and language ability by the use of the statistical procedure for determining the coefficient of correlation.

The results of treating the data in the procedure just indicated were as follows:

I. Comparing Fundamentals of Speech and

	Reading Ability	Language Ability
Number	76	76
r	$.271 \pm .0717$	$.157 \pm .0755$

Multiple Correlation Coefficient .273

II. Comparing Public Speaking and

	Reading Ability	Language Ability
Number	63	63
r	$.031 \pm .0849$	$-.047$

No need for P.E.

⁶ The tests included the Army Alpha; Psychological Examination of the American Council of Education, 1939 edition; and the Massachusetts State Scholastic Aptitude Test, Form: Zeta, 1939.

III. Comparing Literary Interpretation and

	Reading Ability	Language Ability
Number	36	36
r	$.046 \pm .112$	$.274 \pm .106$

Multiple Correlation Coefficient .322

CONCLUSIONS

All conclusions must be interpreted only in the light of the materials used in the study. It should be understood that both the measurement of language and reading ability as indicated on the tests, and ability in speech as indicated by term grades, are open to question as to validity and reliability.

1. No significant relation exists between ability in Fundamentals of Speech as expressed in teachers' grades and (a) reading ability and/or (b) language ability as indicated by the battery of psychological tests.
2. No significant relation exists between ability in Public Speaking as indicated in teachers' grades and (a) reading ability, and/or (b) language ability as indicated by the battery of psychological tests.
3. No significant relation exists between ability in Literary Interpretation as indicated in teachers' grades and (a) reading ability and/or (b) language ability as indicated by the battery of psychological tests.
4. If we know a student's rating in reading ability and/or language ability as determined from the tests used, we have no basis from such rating(s) for determining what his grades will be, as given by the present instructors, in (a) Fundamentals of Speech, (b) Public Speaking, or (c) Literary Interpretation.

